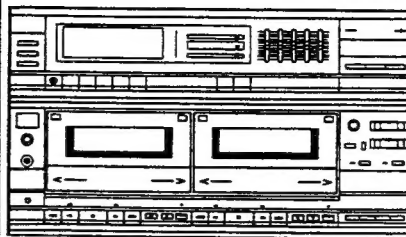


# Service Manual



ORDER NO.  
ARP1314

STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

# DC-X99Z

MODEL DC-X99Z COMES IN FOUR VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Power requirement	Export destination
HE	AC220V, 240V (switchable) *	European continent
HB	AC220V, 240V (switchable) *	United Kingdom
SD	AC110V, 120-127V, 220V, 240V (switchable)	General market
HEZ	AC220V, 240V (switchable) *	West Germany

\* Change the primary wiring, please refer to page 44.

- This service manual is applicable to the HE, HB and SD types.
- As to the HB and SD types, please refer to pages 43-44.
- As to the HEZ type, please refer to the additional service manual (ARP1315).
- Ce manuel d'instruction se réfère au mode de réglage, en français.
- Este manual de servicio trata del método ajuste escrito en español.

## CONTENTS

1. EXPLODED VIEWS .....	2	6. FOR HB AND SD TYPES. ....	43
2. P.C.BOARDS CONNECTION DIAGRAM ....	13	7. ADJUSTMENT. ....	45
3. SCHEMATIC DIAGRAM .....	29	RÉGRAGE .....	50
4. ELECTRICAL PARTS LIST .....	37	AJUSTE .....	55
5. PACKING .....	42		

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan  
**PIONEER ELECTRONICS SERVICE INC.** P.O. Box 1760, Long Beach, California 90801 U.S.A. TEL: [213] 835-6177  
**PIONEER ELECTRONICS OF CANADA, INC.** 505 Cochrane Drive, Markham, Ontario L3R 6B8 Canada TEL: [416] 479-4411  
**PIONEER ELECTRONIC [EUROPE] N.V.** Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775-28-08  
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

# 1. EXPLODED VIEW

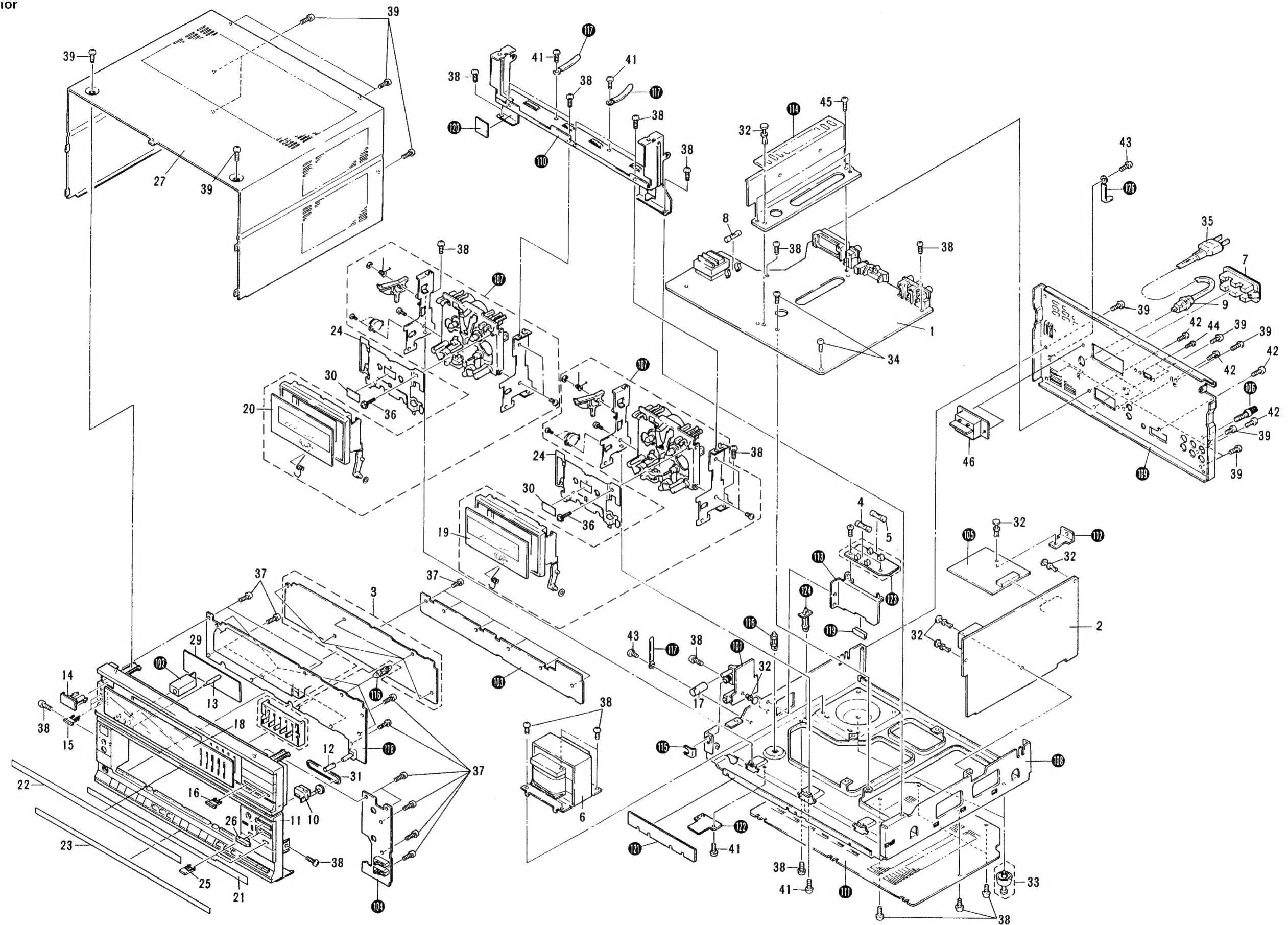
## NOTES:

- Parts without part number cannot be supplied.
- The  $\perp$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks  $\star\star$  and  $\star$ .  
 $\star\star$  GENERALLY MOVES FASTER THAN  $\star$   
 This classification should be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by " $\odot$ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

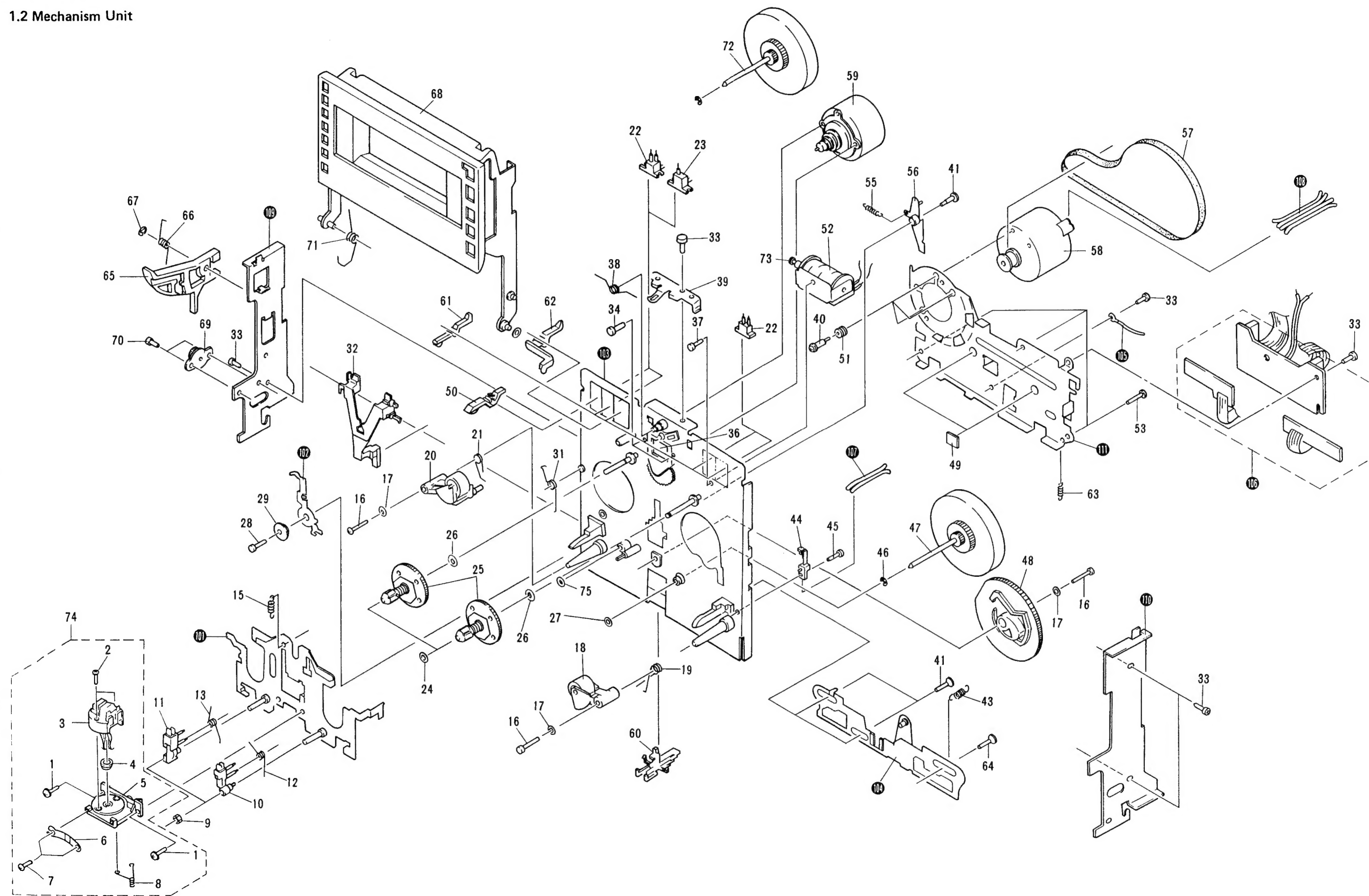
## Parts List of Exterior

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
$\Delta$ $\odot$	1	AWZ1306	Power $\mu$ COM assembly		38	BBZ30P080FMC	Screw
	$\odot$ 2	AWZ1230	TAPE assembly		39	BBZ30P080FZK	Screw
	$\odot$ 3	AWZ1226	GEQ E-VR assembly		40		.....
$\Delta$ $\star\star$	4	AEK-402	FU1 Fuse (T1A/250V)		41	VCZ30P060FMC	Screw
$\Delta$ $\star\star$	5	AEK-403	FU3 Fuse (T2.5A/250V)		42	BPZ30P080FZK	Screw
$\Delta$ $\star$	6	ATS1058	T1 Power transformer		43	BCZ30P060FZK	Screw
		(AC220/240V)			44	VMZ30P060FZK	Screw
$\Delta$	7	AKP-502	AC socket (AC OUTLETS)		45	ABZ30P100FMC	Screw
$\Delta$ $\star\star$	8	AEK-017	FU2 Fuse (2A/250V)				
$\Delta$	9	AEC-882	Strain relief	$\Delta$ $\star\star$	46	ASH-501	Slide switch
	10	AAW1002	Tape counter			(MAIN POWER)	
	11	AMB1142	Front panel assembly		101		MIC headphone assembly
	12	AAB-411	Knob (REC LEVEL)		102		Remote sensor assembly
	13	AAD1094	Knob (ADJUST)		103		Tact SW assembly
	14	AAD1090	Knob (POWER)		104		DOLBY SW assembly
	15	AAD1091	Knob E(TIMER MODO)		105		DOLBY B/C assembly
	16	AAD1092	knob E(MUTING,BALANCE)		106		Terminal (GND)
	17	AAB1016	Knob (MIXING)		107		Mechanism unit
	18	AAK1202	P.C. panel		108		Chassis
	19	AAK1198	Cassette plate		109		Rear panel
	20	AAK1155	Cassette plate		110		Panel stay
	21	AAK1197	Deck panel		111		Bottom plate
	22	AAP1047	Aluminum panel		112		F.E. holder
	23	AAP1025	Aluminum panel		113		Transformer holder
	24	AAP1028	Mechanism cover		114		Heat sink
	25	AAY-355	Push knob C (GRAPHIC EQ REC, RELAY PLAY/REC)		115		Mounting plate
	26	AAY-397	Slide knob (REVERSE MODE)		116		PCB holder
	27	ANE1056	Bonnet case		117		Binder
	28		.....		118		FL assembly
	29	AAK1152	FL filter		119		Rubber B
	30	AAX1053	Fluorescent sheet		120		Rubber A
	31	AEB1033	Counter belt		121		Barrier
	32	AEC-525	Nylon rivet		122		Hole cover
	33	AEC-847	Leg assembly		123		Fuse assembly
	34		.....		124		PCB holder
$\Delta$	35	ADG-041	AC power cord		125		PCB holder
		(AC250V)					
	36	ATT26P120FZK	Screw		126		Binder
	37	BBZ26P080FMC	Screw				

### 1.1 Exterior



## 1.2 Mechanism Unit



## NOTES:

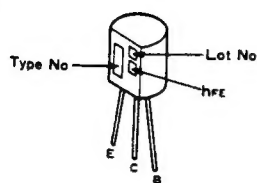
- Parts without part number cannot be supplied.
- The  $\frac{1}{2}$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks \*\* and \*.
- \*\* GENERALLY MOVES FASTER THAN \*
- This classification should be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "©" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## Parts List of Mechanism Unit I,II

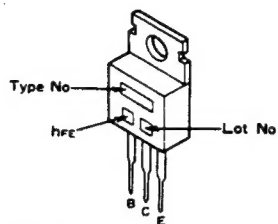
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	AXT-010	Screw with washer	**	44	AXN-036	Leaf switch (PLAY)
	2	ATX-015	Screw		45	AZB1049	Screw
**	3	AZP1011	REC/PB head		46	AZB1050	Washer
	4	AXS-123	Cushion		47	AZN1218	F/W assembly (R)
	5	AXP-049	HD base		48	AZN1219	Cam gear (E)
	6	AXV-120	Spring		49	AZN1226	Spacer
	7	AXT-016	Screw		50	AZS1025	PACK detector lever
	8	AXV-121	Spring		51	AXW-038	Motor cushion
	9	AXS-109	Adjustment nut	*	52	AZS1028	Solenoid
	10	AXS-110	Tape guide		53	PBZ26P080FMC	Screw
	11	AXS-111	Sensor holder		54	.....	.....
	12	AXV-107	Adjustment spring (R)		55	AXV-116	Play arm spring
	13	AXV-108	Adjustment spring (L)		56	AZN1221	Play arm assembly
	14	.....	.....	**	57	AZN1222	Main belt
	15	AXV-109	Head base spring	**	58	AZX1010	Motor assembly (MAIN)
	16	PBZ20P130FMC	Screw	**	59	AZX1009	Motor assembly (REEL)
	17	WB20FMC	Washer		60	AXS-117	Lead holder
	18	AXP-043	Pinch roller assembly (R)		61	AZS1026	REC detector lever
	19	AXV-110	Pinch roller spring (R)		62	AZS1027	Metal detector lever
	20	AZN1220	Pinch roller assembly (L)		63	AXV-117	Earth spring
	21	AXV-111	Pinch roller spring (L)		64	AXT-013	Cap
**	22	AXN-035	Push switch		65	AZN1003	Eject cam
**	23	AZS1001	Push switch		66	AZN1006	Cam spring
	24	WA16D040D020	Washer		67	YE20FUC	E-ring
	25	AXP-045	Reel assembly	**	68	AZN1216	Frame door assembly
	26	WA21D040D030	Washer		69	AZN1008	Damper assembly
	27	AXW-039	Washer		70	PBZ20P030FMC	Screw
	28	PBZ30P080FMC	Screw		71	AZN1227	Eject spring
	29	AXS-112	Spacer		72	AZN1217	F/W assembly (L)
	30	.....	.....		73	AZN1228	Plunger
	31	AXV-112	Anti-eject spring(L)		74	AZP1010	REC/PB head assembly
	32	ANZ1214	Hold lever (C)		75	AZB1060	Washer
	33	PCZ30P040FMC	Screw		101		Head plate
	34	AZB1059	Screw with washer		102		Anti-eject spring
	35	.....	.....		103		Chassis
	36	AZN1215	Idler assembly		104		Slide plate
	37	PBA26P035FMC	Screw		105		Lug
	38	AXV-113	Hold spring		106		Control PC assembly
	39	AXV-114	Spring		107		Wire connector
	40	ATX-012	Motor set screw		108		Wire connector
	41	AXS-114	Cap		109		Mounting plate (R)
	42	.....	.....		110		Mounting plate (L)
	43	AXV-115	Slide Board spring		111		F/W BRACKET

# External Appearance of Transistor and ICs

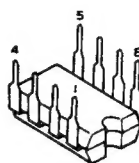
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2SC2240  
2SC2878



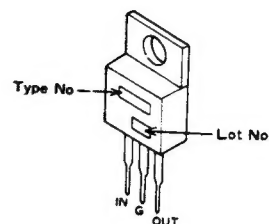
2SD836A  
2SD880



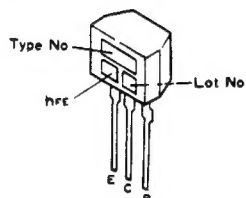
M5218P  
M5218PF  
M5220P



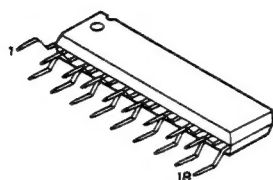
μPC78M05H



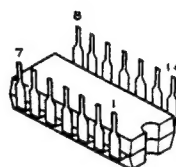
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2SC1740S



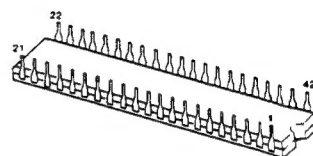
BA3812L



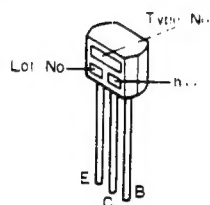
M74LS05P  
TC4011BP  
TC4066BP  
μPD4001BC  
μPD4011BC  
μPD4066BC



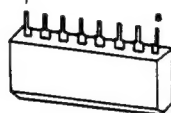
LC7570



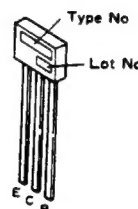
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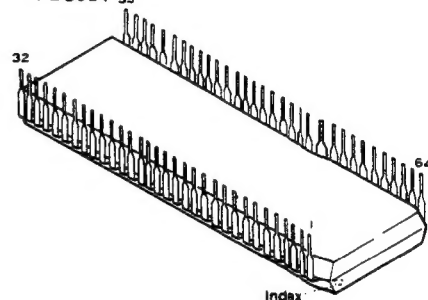
CX20106A  
M5218L  
M5220L  
M51143AL



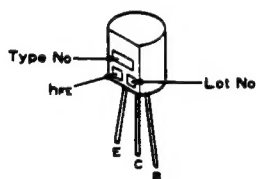
RN1203  
RN2203



PD3081



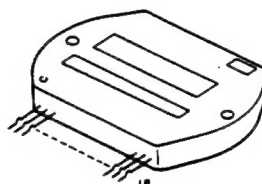
2SA1515



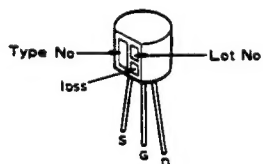
CX20187



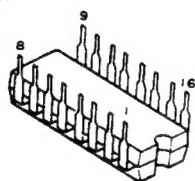
STK4141-2S



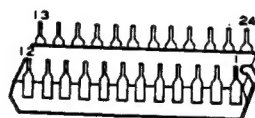
2SJ103



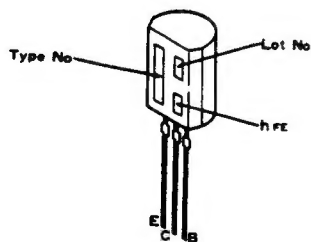
CXD1120P  
TC4019BP  
TC4052BP



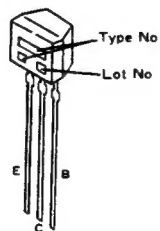
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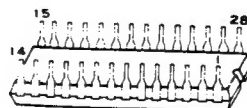
2SD438



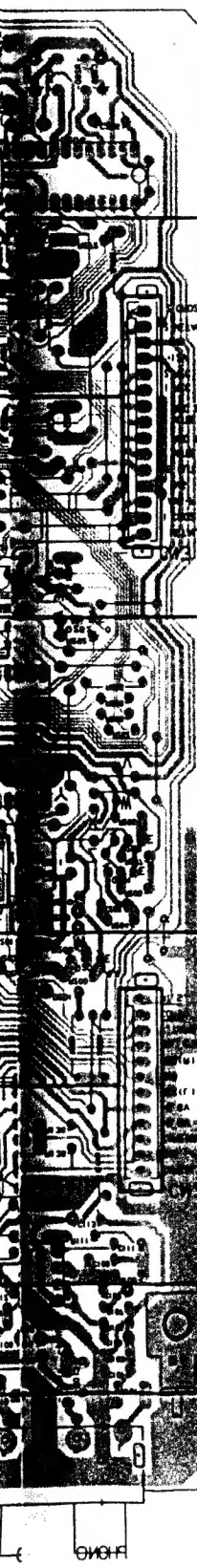
DTA124ES  
DTC124ES



TC9312N

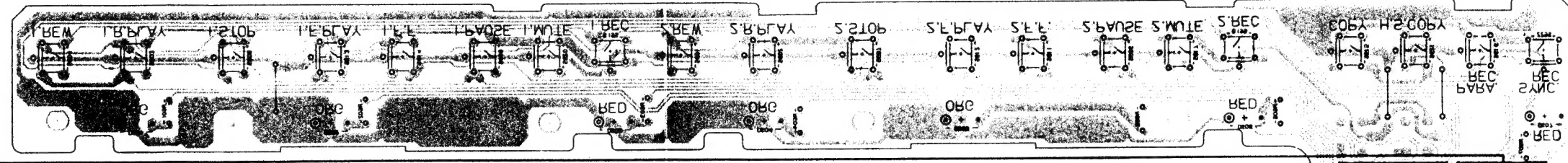






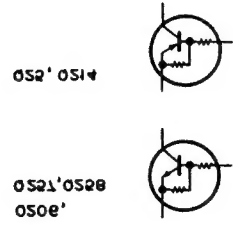
AB521  
AB522  
AB523  
AB524

08 0528 0511  
08 0521 0515  
051 08 IC502 IC508  
IC5 010 02  
04 01 0528



TACT SW ASSEMBLY

02  
05 IC502 IC505  
0510  
014 0508  
012 0508 0521  
032  
IC504 0523  
IC501

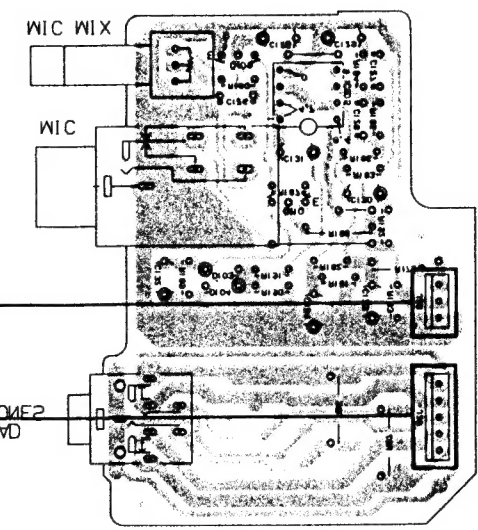


IC2 0505  
012 0504 0501



REMOTE SENSOR ASSEMBLY

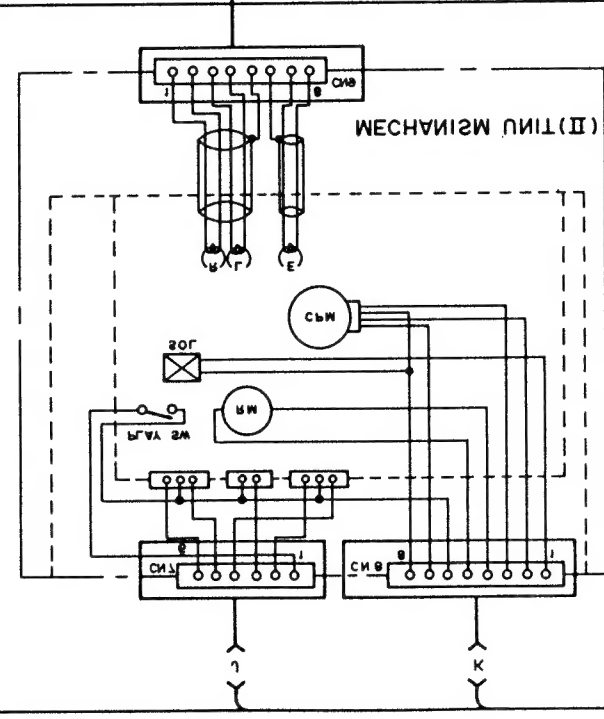
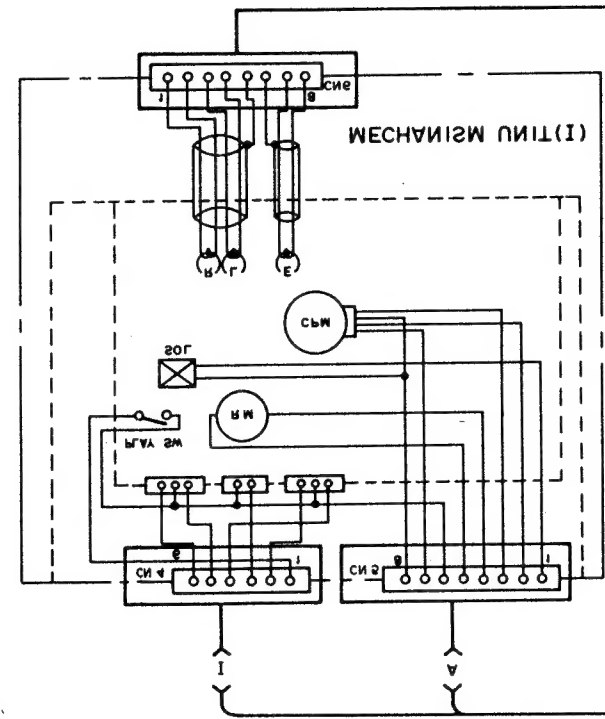
011  
018 050  
018 0408 IC102  
0401 IC105



IC101  
IC104 052 055

PHONE2  
HEAD

MIC HEADPHONE ASSEMBLY



B  
A

## D







7

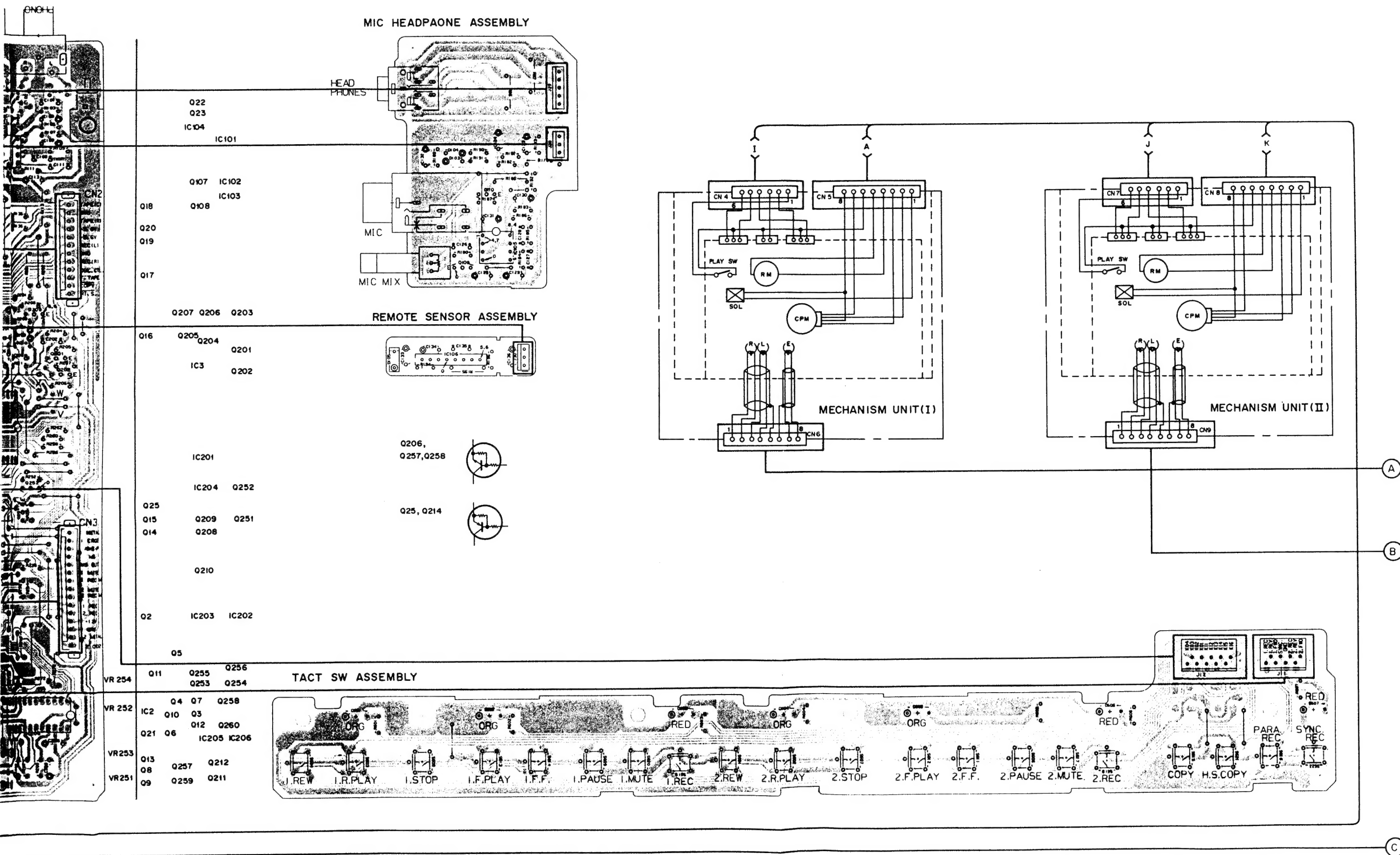
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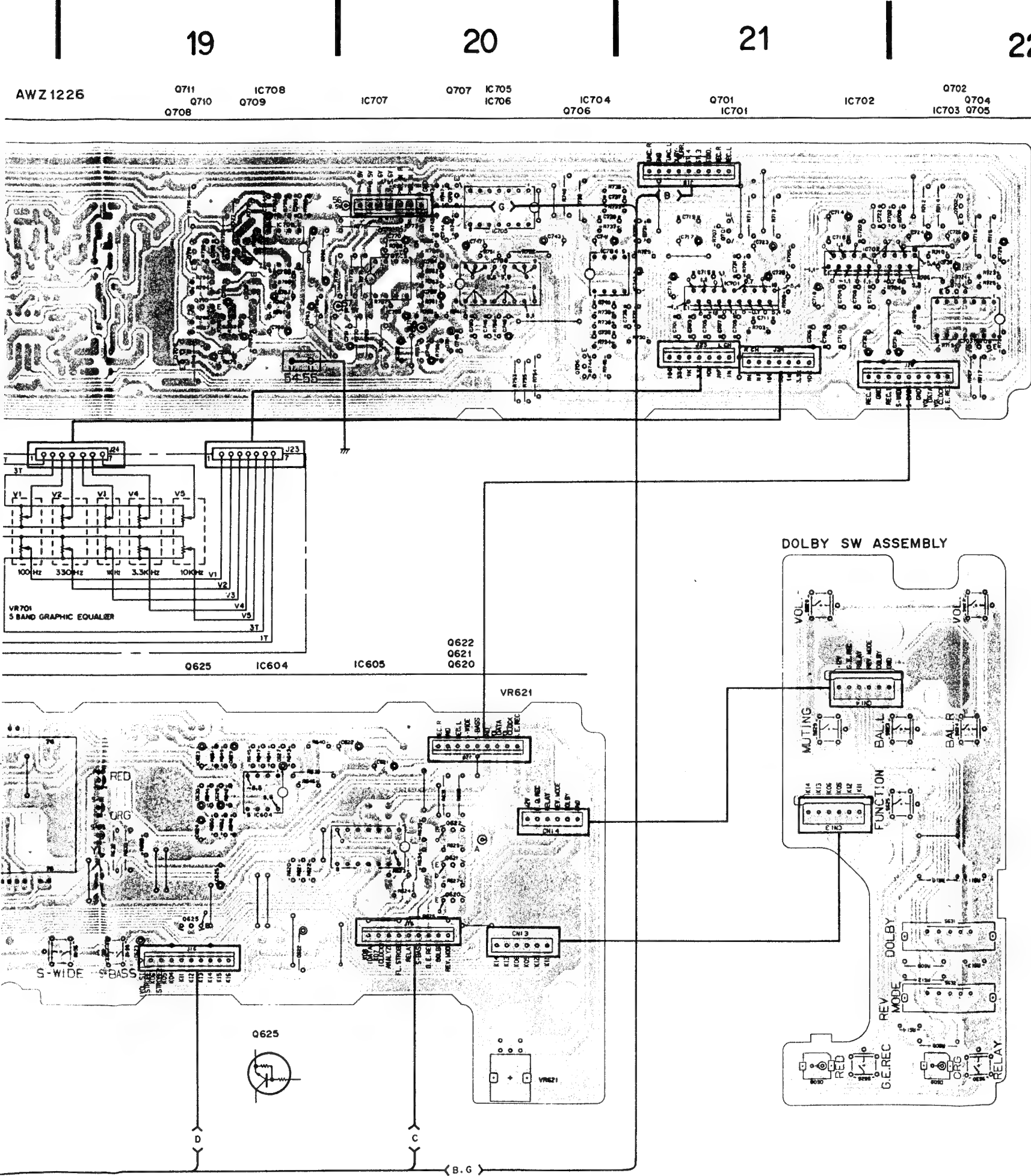
10

11

12







- NOTE
- 1. This P.C.B connection diagram is viewed from the parts mounted side.
  - 2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

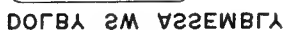
- 3. The capacitor terminal marked with⓪(double circles) shows negative terminal.
- 4. The diode terminal marked with⓪(double circles) shows cathode side.
- 5. The transistor terminal to which E is affixed shows the emitter.

A

B

C

D



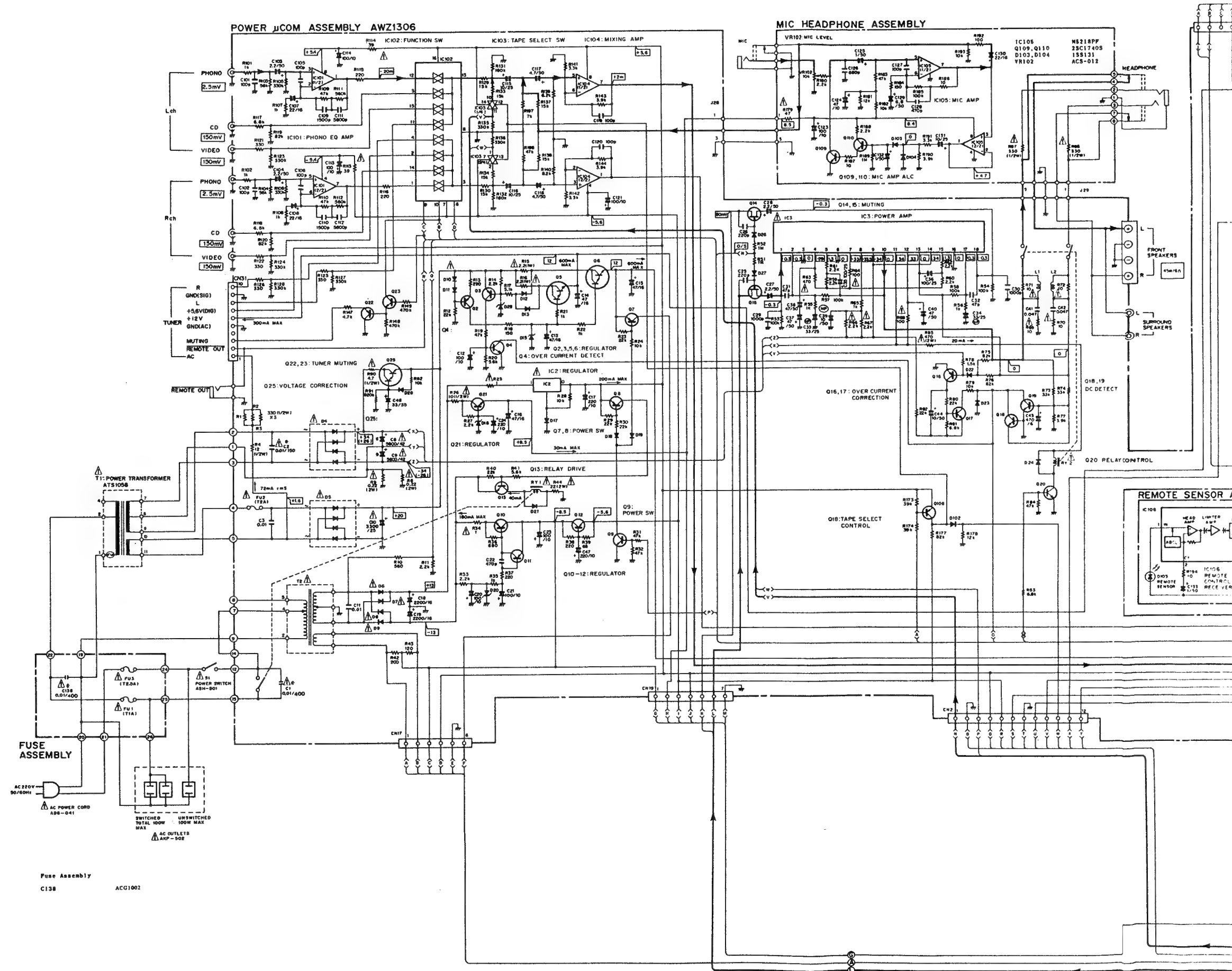
VB	Variable indicator of
E	Effect
C	Cost
RY	Reply
S	Switch
IC	IC
P.C.B. pattern diagram indication	Part Name

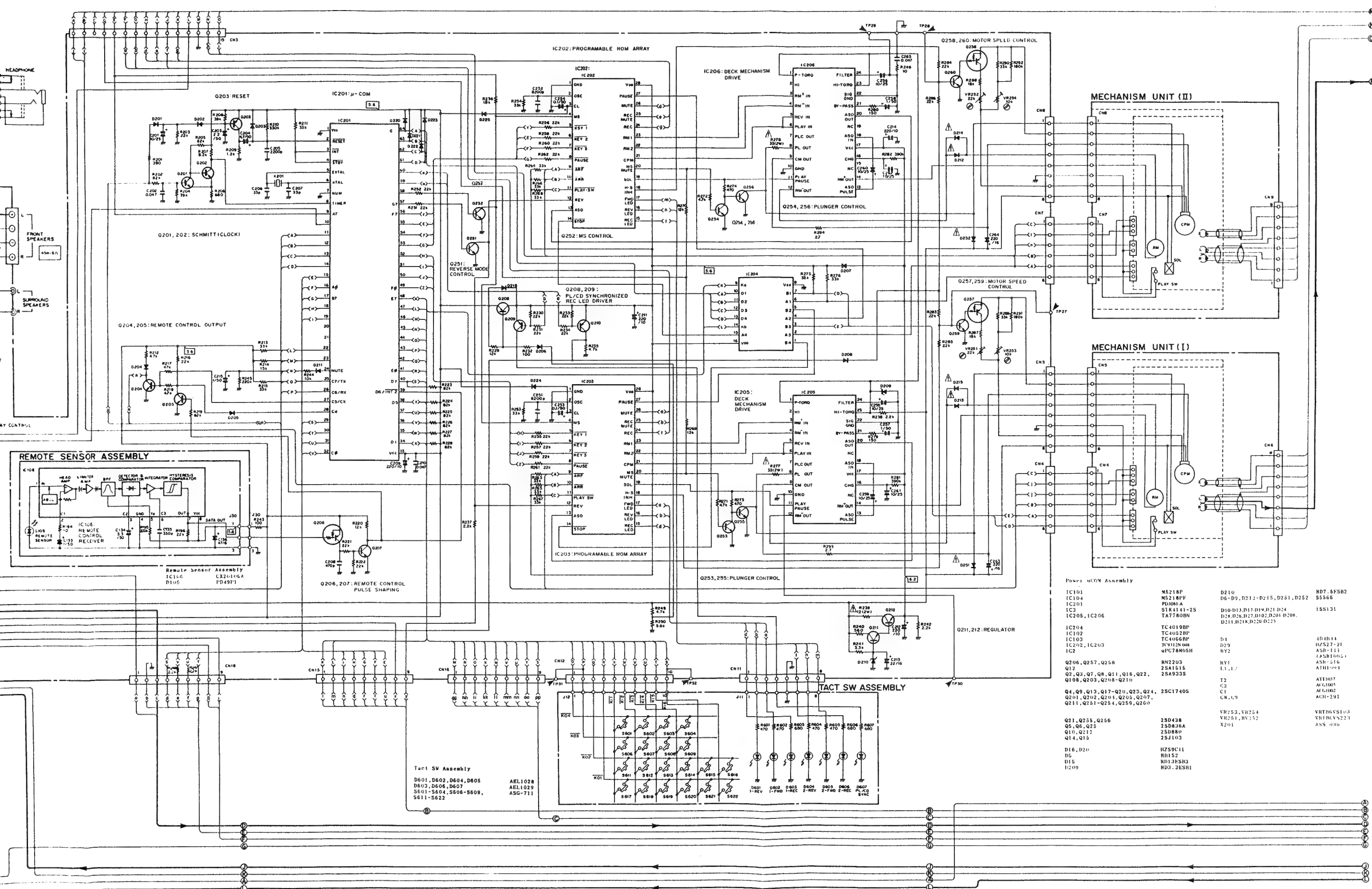
NOTE





## 3. SCHEMATIC DIAGRAM





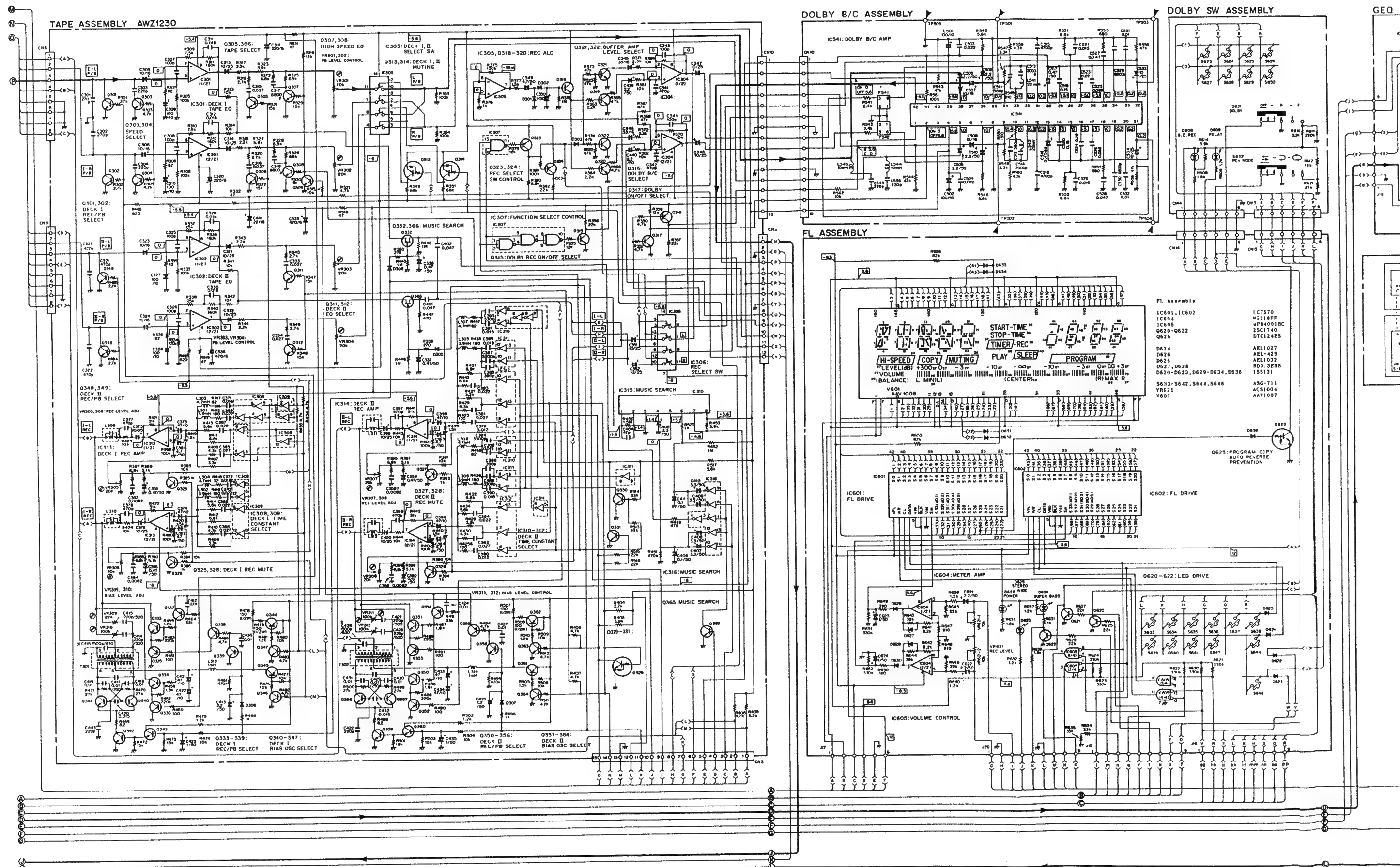
## Power uCOM Assembly

IC101  
IC102  
IC201  
IC202  
IC203  
IC204  
IC205  
IC206  
IC207  
IC208  
IC209  
IC210  
IC211  
IC212  
IC213  
IC214  
IC215  
IC216  
IC217  
IC218  
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IC297  
IC298  
IC299  
IC300

MS218P  
MS218PF  
PD001A  
STK4141-2S  
TA7780BN  
TC4019BP  
TC4052BP  
TC4066BP  
TC4068BP  
UPC78M05H

D210  
D6-D9, D212-D215, D251, D252  
D10-D13, D17-D19, D21-D24  
D26-D28, D31-D33, D36-D38, D41-D43, D46-D48, D51-D53, D56-D58, D61-D63, D66-D68, D71-D73, D76-D78, D81-D83, D86-D88, D91-D93, D96-D98, D101-D103, D106-D108, D111-D113, D116-D118, D121-D123, D126-D128, D131-D133, D136-D138, D141-D143, D146-D148, D151-D153, D156-D158, D161-D163, D166-D168, D171-D173, D176-D178, D181-D183, D186-D188, D191-D193, D196-D198, D201-D203, D206-D208, D211-D213, D216-D218, D221-D223, D226-D228, D231-D233, D236-D238, D241-D243, D246-D248, D251-D253, D256-D258, D261-D263, D266-D268, D271-D273, D276-D278, D281-D283, D286-D288, D291-D293, D296-D298, D301-D303, D306-D308, D311-D313, D316-D318, D321-D323, D326-D328, D331-D333, D336-D338, D341-D343, D346-D348, D351-D353, D356-D358, D361-D363, D366-D368, D371-D373, D376-D378, D381-D383, D386-D388, D391-D393, D396-D398, D401-D403, D406-D408, D411-D413, D416-D418, D421-D423, D426-D428, D431-D433, D436-D438, D441-D443, D446-D448, D451-D453, D456-D458, D461-D463, D466-D468, D471-D473, D476-D478, D481-D483, D486-D488, 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D946-D948, D951-D953, D956-D958, D961-D963, D966-D968, D971-D973, D976-D978, D981-D983, D986-D988, D991-D993, D996-D998, D1001-D1003, D1006-D1008, D1011-D1013, D1016-D1018, D1021-D1023, D1026-D1028, D1031-D1033, D1036-D1038, D1041-D1043, D1046-D1048, D1051-D1053, D1056-D1058, D1061-D1063, D1066-D1068, D1071-D1073, D1076-D1078, D1081-D1083, D1086-D1088, D1091-D1093, D1096-D1098, D1101-D1103, D1106-D1108, D1111-D1113, D1116-D1118, D1121-D1123, D1126-D1128, D1131-D1133, D1136-D1138, D1141-D1143, D1146-D1148, D1151-D1153, D1156-D1158, D1161-D1163, D1166-D1168, D1171-D1173, D1176-D1178, D1181-D1183, D1186-D1188, D1191-D1193, D1196-D1198, D1201-D1203, D1206-D1208, D1211-D1213, D1216-D1218, D1221-D1223, D1226-D1228, D1231-D1233, D1236-D1238, D1241-D1243, D1246-D1248, D1251-D1253, D1256-D1258, D1261-D1263, D1266-D1268, D1271-D1273, D1276-D1278, D1281-D1283, D1286-D1288, D1291-D1293, D1296-D1298, D1301-D1303, D1306-D1308, D1311-D1313, D1316-D1318, D1321-D1323, D1326-D1328, D1331-D1333, 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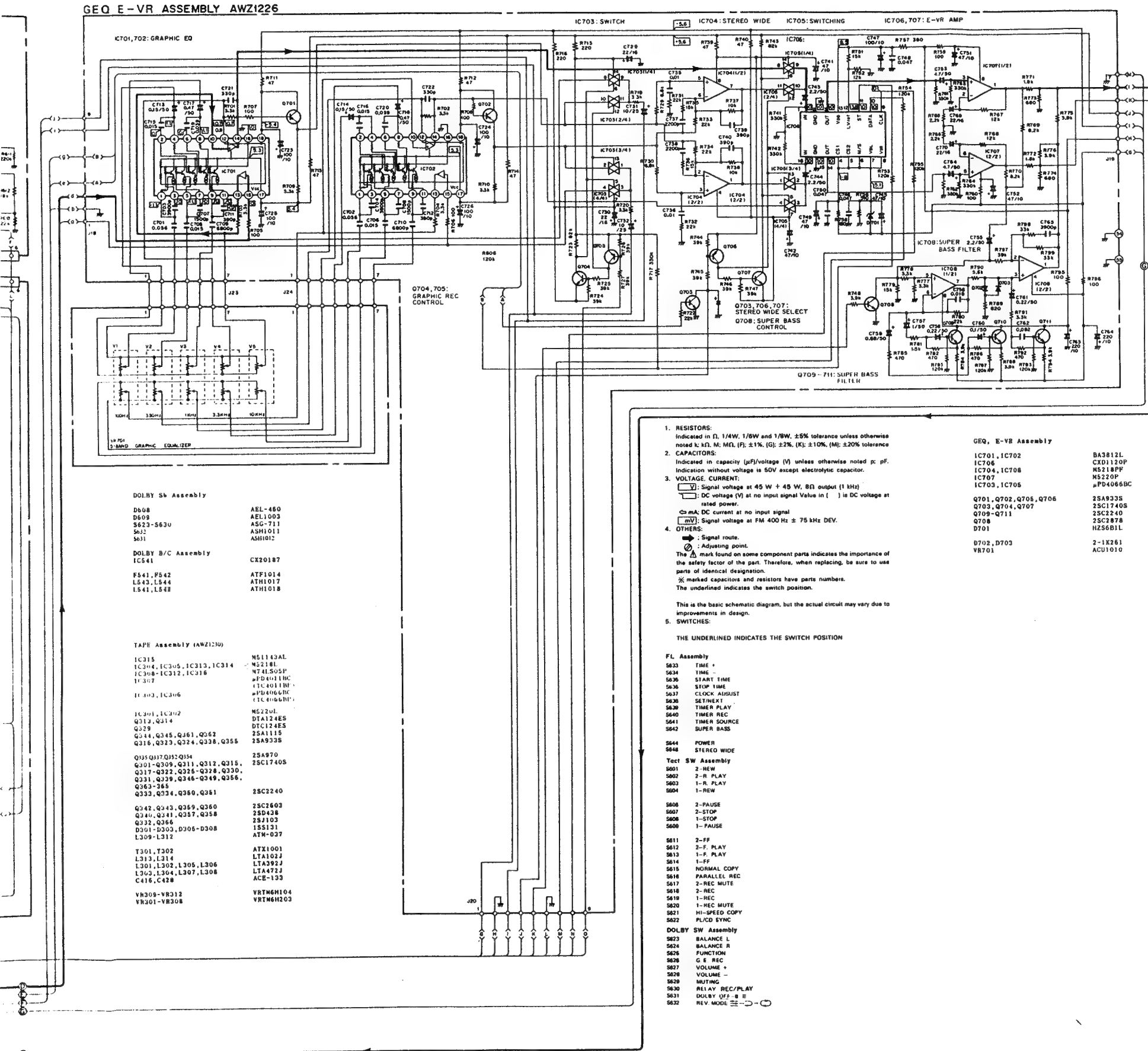




NOTE:

The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

GEO E-VR ASSEMBLY AWZ1226



1. RESISTORS:  
Indicated in  $\Omega$ , 1/4W, 1/8W and 1/16W,  $\pm 5\%$  tolerance unless otherwise noted; k: k $\Omega$ , M: M $\Omega$ , (P):  $\pm 1\%$ , (G):  $\pm 2\%$ , (K):  $\pm 10\%$ , (M):  $\pm 20\%$  tolerance.
2. CAPACITORS:  
Indicated in capacity ( $\mu$ F)/voltage (V) unless otherwise noted; p: pF.  
Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT:  
V: Signal voltage at 45 W + 45 W, 8 $\Omega$  output (1 kHz)  
V: DC voltage (V) at no input signal Value in [ ] is DC voltage at rated power.  
mA: DC current at no input signal  
V: Signal voltage at FM 400 Hz  $\pm 75$  kHz DEV.
4. OTHERS:  
Signal route.  
Adjusting point.  
The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.  
Marked capacitors and resistors have parts numbers.  
The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

## E. SWITCHES:

THE UNDERLINED INDICATES THE SWITCH POSITION

## FL Assembly

S623 TIME +  
S634 TIME -  
S636 START TIME  
S638 STOP TIME  
S637 CLOCK ADJUST  
S636 SET/RESET  
S639 TIMER PLAY  
S640 TIMER REC  
S641 TIMER SOURCE  
S642 SUPER BASS

## POWER

S644 POWER  
S648 STEREO WIDE

## Tact SW Assembly

S601 2-REW  
S602 2-R PLAY  
S603 1-R PLAY  
S604 1-REW  
S608 2-PAUSE  
S607 2-STOP  
S608 1-STOP  
S609 1-PAUSE

## 2-FF

S611 2-FF  
S612 2-F PLAY  
S613 1-F PLAY  
S614 1-FF  
S615 NORMAL COPY  
S616 PARALLEL REC  
S617 2-REC MUTE  
S618 2-REC  
S619 1-REC  
S620 1-REC MUTE  
S621 HI-SPEED COPY  
S622 PL/CD SYNC

## DOLBY SW Assembly

S623 BALANCE L  
S624 BALANCE R  
S625 FUNCTION  
S626 G E REC  
S627 VOLUME +  
S628 VOLUME -  
S629 MUTING  
S630 RELAY REC/PLAY  
S631 DOLBY OFF-B  
S632 REV MODE

A

B

C

D





★ D10—D13, D17—D19,  
D21—D24, D26—D28,  
D102, D201—D208, D211,  
D220—D225

1SS131

△ ★ D4 4D4B44  
★ D29 HZS27-2L

C210  
C202, C265  
C109, C110  
C41, C42  
C111, C112

CKCYF473Z50  
CKCYX473M25  
CQMA152K50  
CQMA473K50  
CQMA562K50

C29, C30

CQMXA102J100

## RELAY

Mark	Symbol & Description	Part No.
★★	RY2	ASR-111 (ASR1005)
△ ★★	RY1	ASR-516

## COILS & TRANSFORMER

Mark	Symbol & Description	Part No.
	L1, L2 AF choke coil	ATH1004
△ ★	T2 Power transformer	ATT1037

## CAPACITORS

Mark	Symbol & Description	Part No.
△	C2 (0.01μF/AC150V)	ACG1005
△	C1 (0.01μF/AC400V)	ACG1002
△	C8, C9 (5600μF/42V)	ACH-291
	C206, C207	CCCCH330J50
	C101, C102, C105, C106, C119, C120	CCCSL101J50
	C25, C26	CCCSL221J50
	C31, C32	CCCSL470J50
	C39	CEANP100M50
	C215, C257, C258	CEAS010M50
	C201, C255, C256, C259—C262	CEAS100M25
	C253, C254	CEAS0R1M50
	C44	CEAS100M50
	C12, C20, C21, C23, C113, C144, C121	CEAS101M10
	C103, C104, C203	CEAS2R2M50
	C107, C108, C213	CEAS220M16
	C43	CEAS471M6
	C17, C24, C47, C209, C211, C212, C214	CEAS221M10
	C263, C264	CEAS221M16
	C18, C19	CEAS222M16
△	C48	CEHAQ330M35
	C10	CEAS332M25
	C204	CEAS4R7M50
	C13—C16	CEAS470M16
	C37, C38	CEAS470M50
	C115, C116	CEYA100M25
	C33, C34	CEYANP330M25
	C35, C36	CEYA101M25
	C117, C118	CEYA4R7M50
	C27, C28	CEYA2R2M50
	C40	CEYA470M50
	C205	CKCYB222K50
	C22, C208	CKCYB471K50
	C251, C252	CKCYB822K50
	C3, C11	CKCYF103Z50

## RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
△	R26, R90	RD1/2PMF□□□J
	R1—R4	RD1/2PM□□□J
△	R63, R64, R66—R70	RD1/4PMFL□□□J
△	R25, R34, R71, R72, R113, R114	RD1/4PMF□□□J
	R10, R11, R42, R43, R59—R62, R65	RD1/4PM□□□J
△	R85	RS1LMF681J
△	R15, R16	RS1LMF2R2J
△	R8, R44, R239, R277, R278, R9	RS2LMF□□□J
★	VR253, VR254 Semi-fixed(10k)	VRTB6VS103
★	VR251, VR252 Semi-fixed(22k)	VRTB6VS223
	Other resistors	RD1/8PM□□□J

## OTHERS

Mark	Symbol & Description	Part No.
	Jack 2P	AKB-093
	(SURROUND SPEAKERS)	
	Jack 6P	AKB-095
	(PHONO, CD, VIDEO)	
	Jack (REMOTE OUT)	AKN-207
	X201 Ceramic resonator	ASS-030
	Terminal 4P	AKE-109
	(FRONT SPEAKERS)	

## FL Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC601, IC602	LC7570
★★	IC604	M5218PF
★★	IC605	μPD4001BC
★★	Q620—Q622	2SC1740S
★★	Q625	DTC124ES
★	D624	AEL1027
★	D626	AEL-429
★	D625	AEL1032
★	D627, D628	RD3.3ESB
★	D620—D623, D629—D634, D636	1SS131

## SWITCHES

Mark	Symbol & Description	Part No.
★★	S633—S642, S644, S648	ASG-711
	Tact switch	
	(TIME(+), TIME(-), START TIME, STOP TIME, CLOCK ADJUST, SET/NEXT, TIMER PLAY, TIMER REC, TIMER SOURCE, SUPER BASS, POWER, STEREO WIDE,)	

## CAPACITORS

Mark	Symbol & Description	Part No.
	C623, C624	CEJA010M50
	C621, C622	CEJA2R2M50

## RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Symbol & Description	Part No.
★	VR621 Variable resistor (10k) (REC LEVEL)	ACS1004
	R631—R633	RD1/4PM □ □ □ J
	Other resistors	RD1/8PM □ □ □ J

## OTHERS

Mark	Symbol & Description	Part No.
★	V601 FL indicator	AAV1007

## GEQ, E-VR Assembly(AWZ1226)

### SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC701, IC702	BA3812L
★★	IC706	CXD1120P
★★	IC704, IC708	M5218PF
★★	IC707	M5220P
★★	IC703, IC705	μPD4066BC
★★	Q701, Q702, Q705, Q706	2SA933S
★★	Q703, Q704, Q707	2SC1740S
★★	Q709—Q711	2SC2240
★★	Q708	2SC2878
★	D701	HZS6B1L
★	D702, D703	2-1K261

## CAPACITORS

Mark	Symbol & Description	Part No.
	C713, C714	CEASR15M50
	C758, C761	CEASR22M50
	C717, C718	CEASR47M50
	C759	CEASR68M50
	C760	CEASOR1M50
	C757	CEAS010M50
	C731, C732, C771	CEAS100M25
	C723—C726, C747	CEAS101M10
	C755	CEAS2R2M50
	C729, C730	CEAS220M16
	C763, C764	CEAS221M10
	C741, C742, C749, C751,	CEAS470M10
	C752, C745	
	C743, C744	CEYA2R2M50
	C753, C754	CEYA4R7M50
	C735, C736	CKCYB103K50
	C769, C770	CEYA220M16
	C707, C708	CKCYB152K50
	C737, C738	CKCYB222K50
	C721, C722	CKCYB331K50
	C711, C712, C739, C740	CKCBY391K50

C703, C704, C765	CKCYB392K50
C709, C710	CKCYB682K50
C705, C706, C715, C716	CKCYX153M25
C756	CKCYX183M25
C719, C720	CKCYX393M25

C746, C748, C750	CKCYX473M25
C701, C702	CKCYX563M25
C762	CQMA823K50

## RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Symbol & Description	Part No.
★	VR701 Variable resistor (GEQ, E-Volume)	ACU1010
	R759, R760, R795, R796, R711—R714, R739, R740	RD1/4PM □ □ □ J
	Other resistors	RD1/8PM □ □ □ J

## TAPE Assembly (AWZ1230)

### SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC315	M51143AL
★★	IC304, IC305, IC313, IC314	M5218L
★★	IC308—IC312, IC316	M74LS05P
★★	IC307	μPD4011BC (TC4011BP)
★★	IC303, IC306	μPD4066BC (TC4066BP)
★★	IC301, IC302	M5220L
★★	Q313, Q314	DTA124ES
★★	Q329	DTC124ES
★★	Q344, Q345, Q361, Q362	2SA1115
★★	Q316, Q323, Q324, Q338, Q355	2SA933S
★★	Q335—Q337, Q352—Q354	2SA970
★★	Q301—Q309, Q311, Q312, Q315, Q317—Q322, Q325—Q328, Q330, Q331, Q339, Q346—Q349, Q356, Q363—365	2SC1740S
★★	Q333, Q334, Q350, Q351	2SC2240
★★	Q342, Q343, Q359, Q360	2SC2603
★★	Q340, Q341, Q357, Q358	2SD438
★★	Q332, Q366	2SJ103
★	D301—D303, D305—D308	1SS131

## COILS & TRANSFORMERS

Mark	Symbol & Description	Part No.
	L309—L312 Trap coil	ATM-037
	T301, T302	ATX1001
	Bias OSC transformer	
	L313, L314 Inductor	LTA102J
	L301, L302, L305, L306	LTA392J
	Inductor	
	L303, L304, L307, L308	LTA472J
	Inductor	

## CAPACITORS

Mark	Symbol & Description	Part No.
	C416, C428	ACE-133
	C307, C308, C325, C326, C343, C344	CCCSL101J50
	C303, C304, C442, C443	CCCSL221J50
	C414, C415, C426, C427	CCCSL221K500
	C301, C302	CCCSL271J50
	C404	CCCSL470J50
	C305, C306, C323, C324	CEANL100M16
	C337, C338, C355, C356, C359, C360	CEASR47M50
	C406, C411	CEASOR1M50
	C350, C423, C435	CEAS010M50
	C313, C314, C331, C332, C347, C348, C351, C352, C375, C376, C399, C400	CEAS100M25
	C309, C310, C327, C328	CEAS101M10
	C413, C425, C439, C440	CEAS2R2M50
	C441	CEAS220M16
	C319, C320, C335, C336	CEAS471M6
	C405, C407—C410	CEAS3R3M50
	C345, C346	CEAS330M16
	C349, C361—C364	CEAS4R7M50
	C373, C374, C395, C396, C421, C422, C433, C434	CEAS470M10
	C385, C386	CKCVB391K50
	C321, C322, C341, C342, C377, C378, C397, C398	CKCYB471K50
	C412, C424, C426, C437	KCKYF103Z50
	C418, C419, C430, C431	CQMA103J50
	C417, C429	CQMA103K250
	C379, C380	CQMA123J50
	C391, C392, C420, C432	CQMA153J50
	C311, C312, C329, C330, C371, C372, C389, C390	CQMA183J50
	C367—C370, C383, C384	CQMA223J50
	C315, C316, C333, C334, C365, C366, C381, C382	CQMA273J50
	C387, C388, C393, C394	CQMA332J50
	C401, C402	CQMA473J50
	C317, C318	CQMA683J50
	C353, C354, C357, C358	CQMA822J50

## RESISTORS

**NOTE:** When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R478, R479, R507, R508	RD1/2PM□□□J
	R331, R332, R518, R519	RD1/4PMF470J
	R450	RD1/4PM155J
★	VR309—VR312 (Semi-fixed)	VRTM6H104
★	VR301—VR308 (Semi-fixed)	VRTM6H203
	Other resistors	RD1/8PM□□□J

## MIC Headphone Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC105	M5218PF
★★	Q109, Q110	2SC1740S
★	D103, D104	1SS131

## CAPACITORS

Mark	Symbol & Description	Part No.
	C127	CCCSL101J50
	C125	CEANL101M50
	C129	CEAS6R8M50
	C132	CEJA010M50
	C131	CEJA100M25
	C123	CEJA101M10
	C130	CEJA220M16
	C124	CEJA470M10
	C128	CKCYB471K50
	C126	CKCYB681K50

## RESISTORS

**NOTE:** When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR102 (Semi-fixed) 10k	ACS-012
△	R86, R87	RD1/2PMF331J
△	R179	RD1/4PMF470J
	Other resistors	RD1/8PM□□□J

## OTHERS

Mark	Symbol & Description	Part No.
	Jack (MIC)	AKN1004
	Jack (HEADPHONE)	AKN1005

## Remote Sensor Assembly SEMIDONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC106	CX20106A
★	D105	PD49P1

## CAPACITORS

Mark	Symbol & Description	Part No.
	C133	CEJA010M50
	C134	CEJA010M50
	C136	CEJA3R3M50
	C135	CKCYB331K50

## RESISTORS

Mark	Symbol & Description	Part No.
	R195	RN1/4PQ2003F
	R194	RD1/8PM100J
	R196	RD1/8PM223J

## OTHERS

Mark	Symbol & Description	Part No.
	Shield plate	ANK1021

### Tact SW Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D601, D602, D604, D605	AEL1028
★	D603, D606, D607	AEL1029

### SWITCHES

Mark	Symbol & Description	Part No.
★★	S601—S604, S606—S609, S611—S622 Tact switch (1-2 REW, 2-R.PLAY, 1-R. PLAY, 1-REW, 2-PAUSE, 2-1-STOP, 1-PAUSE, 2-FF, 2-F PALY, 1-F PLAY, 1-FF, NORMAL COPY, PARALLEL REC 2, REC MUTE, 2-REC, 1-REC, 1-REC MUTE, HI-SPEED COPY, PL/CD SYNC.)	ASG-711

### RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

### DOLBY SW Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D608	AEL-460
★	D609	AEL1003

### SWITCHES

Mark	Symbol & Description	Part No.
★★	S623—S630 Tact switch (BALANCE, (L), BALANCE (R), FUNCTION, G, E, REC, VOLUME (+), VOLUME(-), MUTING, RELAY PLAY/REC)	ASG-711
★★	S632 Slide switch (REV MODE)	ASH1011
★★	S631 Slide switch (DOLBY)	ASH1012

### RESISTORS

Mark	Symbol & Description	Part No.
	R608, R609	RD1/4PM□□□J
	Other resistors	RD1/8PM□□□J

### DOLBY B/C Assembly SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC541	CX20187

### FILTERS & COILS

Mark	Symbol & Description	Part No.
	F541, F542 DOLBY filter	ATF1014
	L543, L544 Inductor	ATH1017
	L541, L542 Inductor	ATH1018

### CAPACITORS

Mark	Symbol & Description	Part No.
	C535, C536	CCCSL221J50
	C517, C518	CEASR47M50
	C533, C543	CEAS100M25
	C501, C502	CEAS101M10
	C509, C510	CEAS2R2M50
	C507, C508	CEYA100M16
	C505, C506	CEYA2R2M50
	C511, C512	CKCYB551K50
	C503, C504	CKCYF223Z50
	C531, C532	CQMA103J50
	C521, C522	CQMA153J50
	C519, C520	CQMA154J50
	C523, C524	CQMA224J50
	C513, C514	CQMA302J50
	C515, C516	CQMA472J50
	C527, C528	CQMA473J50
	C529, C530	CQMA682J50
	C525, C526	CQMA683J50

### RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PN□□□J

### Fuse Assembly CAPACITOR

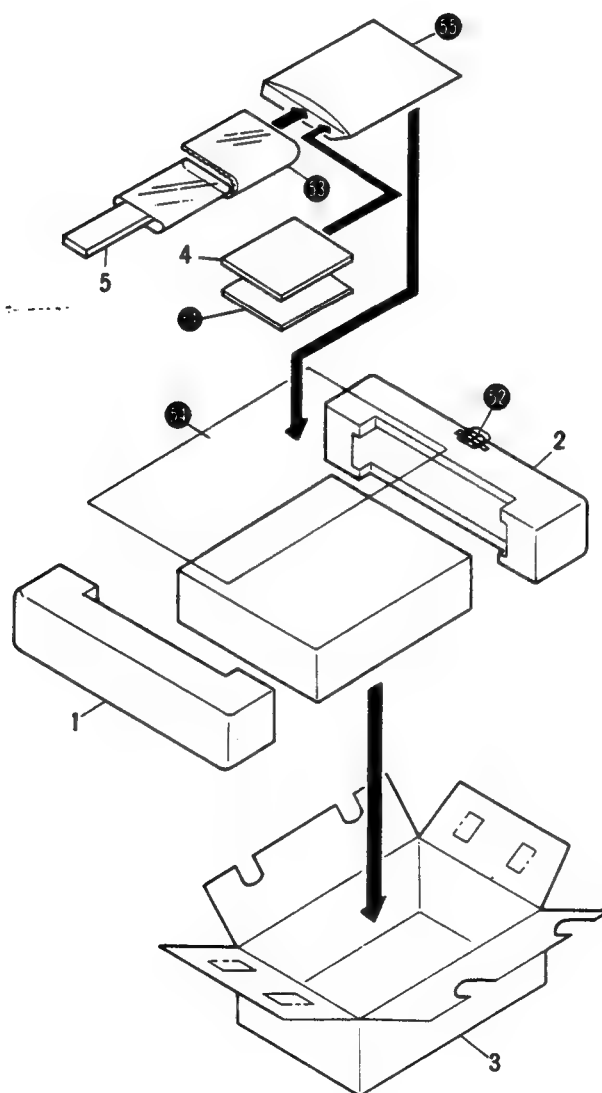
Mark	Symbol & Description	Part No.
△	C138 (0.01μF/AC400V)	ACG1002



## 5. PACKING

### Parts List

Mark	No.	Part No.	Description
	1	AHA1038	Front pad
	2	AHA1039	Rear pad
	3	AHD1170	Packing case
	4	ARE1040	Operating instructions (English/German/French/ Italian)
	5	AXD1016	Remote control unit
	51		Warranty card
	52		Battery assembly
	53		Air cap
	54		Packing sheet
	55		Envelope



## 6. FOR HB AND SD TYPES

### CONTRAST OF MISCELLANEOUS PARTS

The DC-X99Z/HB and SD types are the same as the DC-X99Z/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		DC-X99Z			
		HE type	HB type	SD type	
△ ◎	Power μCOM Assembly	AWZ1306	AWZ1306	AWZ1331	
△	Fuse Assembly	Non supply	Non supply	Non supply	
△	AC power cord	ADG-041	ADG-051	ADG1015	
△	Strain relief	AEC-882	AEC-882	.....	
△	AC socket (AC OUTLET)	AKP-502	AKP-505	AKP-515	
	MIC headphone assembly	Non supply	Non supply	Non supply	
△ ★★	F1 Fuse (T1A/250V)	AEK-402	AEK-508	.....	
△ ★★	F1 Fuse (T1.6A/250V)	.....	.....	AEK-405	
△ ★★	F2 Fuse (T2A/250V)	AEK-017	AEK-511	AEK-017	
△ ★★	F3 Fuse (T2.5A/250V)	AEK-403	AEK-512	.....	
△ ★★	F3 Fuse (T1.6A/250V)	.....	.....	AEK-405	
△ ★	T1 Power transformer (AC220/240V)	ATS1058	ATS1058	.....	
△ ★	T1 Power transformer (AC110/120-127/220/240V)	.....	.....	ATS1057	
△ ★★	S2 Voltage selector (AC110/120-127/220/240V)	.....	.....	AKX-507	
△ ★★	S3 Voltage selector (AC110/120-127/220/240V)	.....	.....	AKX1007	
	Screw	.....	.....	VBZ30P100FMC	
	Cushion rubber	.....	.....	AEB1003	
	Operating instructions (English, German, French, Italian)	ARE1040	.....	.....	
	Operating instructions (English)	.....	ARB1049	ARB1055	
	Operating instructions (Spanish-auxiliary)	.....	.....	ARC1030	
	Rear panel	Non supply	Non supply	Non supply	
	Heat sink	.....	.....	Non supply	
	Heat-sink holder	.....	.....	Non supply	

### POWER $\mu$ COM ASSEMBLY (AWZ1331)

The power  $\mu$ COM assembly (AWZ1331) is the same as the power  $\mu$ COM assembly (AWZ1306) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ1306 HE/HB types	AWZ1331 SD type	
△ ★★	IC3	STK4141-2S	STK4191-5S	
△	R90	RD1/2PMF4R7J	RD1/2PMF100J	
	R55, R56	RD1/8PM102J	RD1/8PM911J	
△	R85	RS2LMF471J	RS2LMF911J	
△	C8, C9	ACH-291	ACH-258	
△ ★	T2	ATT1037	ATT1036	
△ ★★	RY2	ASR-111	ASR-109	
		(ASR1005)	(ASR-112)	
	C49, C50	.....	CCCSL010C50	

## FUSE ASSEMBLY

The fuse assembly for SD type is the same as the fuse assembly for HE/HB types with the exception of the following sections.

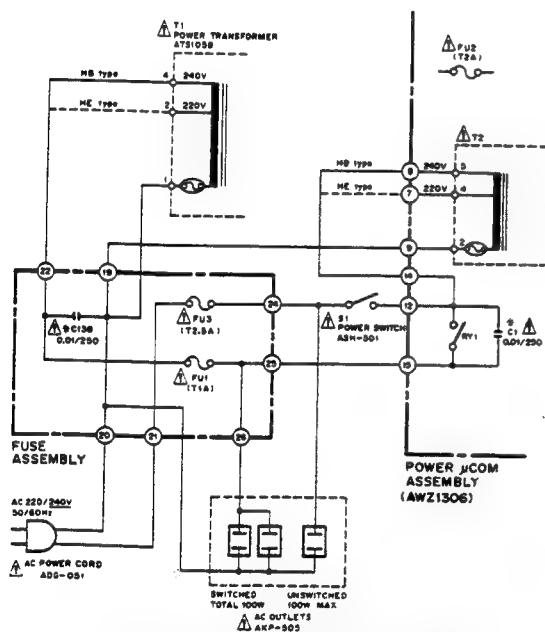
Mark	Symbol & Description	Part No.		Remarks
		HE/HB types	SD type	
	Terminal	Non supply	.....	

## MIC HEADPHONE ASSEMBLY

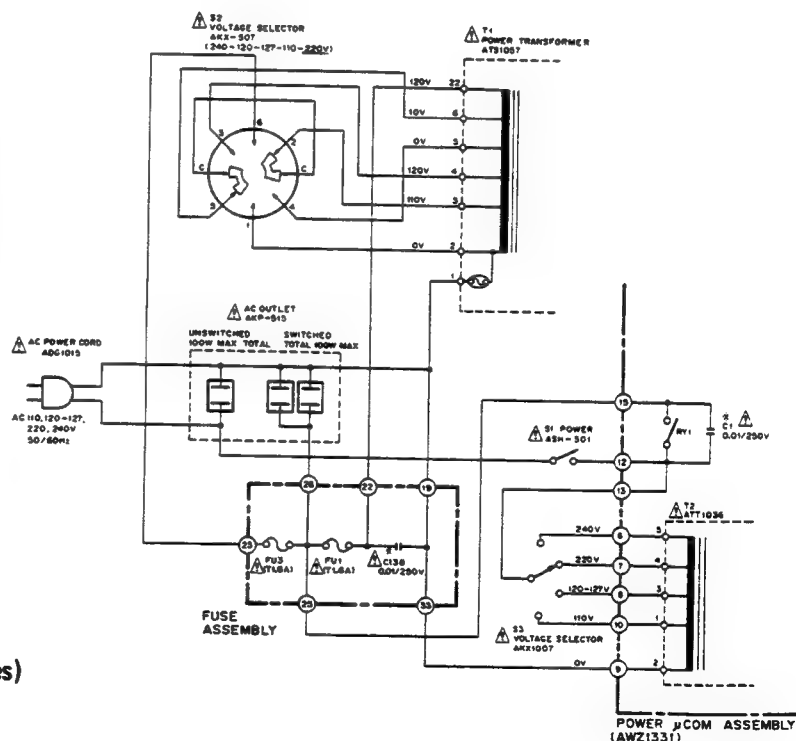
The MIC headphone assembly for SD type is the same as the MIC headphone assembly for HE/HB types with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE/HB types	SD type	
△ △	R86, R87 R88, R89	RD1/2PMF331J .....	RD1/2PMF681J RD1/2PMF681J	

Schematic Diagram of HB type



Schematic Diagram of SD type



## Line Voltage Selection (For HE and HB types)

Line voltage can be changed with following steps.

1. Disconnect the AC Power cord.
2. Remove the Bonnet case.
3. Change the connection of the primary lead wires.  
(Connect as shown in Fig. above (left).)
4. Stick the line voltage label on the rear panel.

Description	Part No.
220V label	AAX-193
240V label	AAX-192

## 7. ADJUSTMENTS

### 7.1 MECHANICAL SECTION ADJUSTMENT

1. Tape speed adjustment (Normal-speed adjustment after double-speed adjustment is performed.)			
Mode	Test tape	Adjusting points	Specifications/Ratings (playback frequency)
PLAY	Play back 3kHz section of STD-301 (DECK-I)	VR253 (double speed)	Adjust so that it becomes 6030Hz. (Short-circuit TP27 and TP29 after playback.)
		VR251 (normal speed)	Adjust so that it becomes 3015Hz. (Press the PLAY switch.)
	Play back 3kHz section of STD-301 (DECK-II)	VR254 (double speed)	Adjust so that it becomes 6030Hz. (Short-circuit TP28 and TP29 after playback.)
		VR252 (normal speed)	Adjust so that it becomes 3015Hz. (Press the PLAY switch.)
2. Tape path adjustment			
Mode	Adjusting points		Specifications
FWD	FWD azimuth adjustment screw		Playback 10kHz, -20dB with STD-331 test tape. Adjust so that the signal output at test points of TP501 and TP502 becomes maximum.
REV	REV azimuth adjustment screw		
Load the cassette, then lift the head base with your hand so that tape contacts the tape guide.			
STOP	Height adjustment screws (left and right)		Visually check whether tape is on tape guide center.
FWD PLAY	FWD height adjustment screw		Adjust primary tape guide so that tape is not curled.
REV PLAY	REV height adjustment screw		

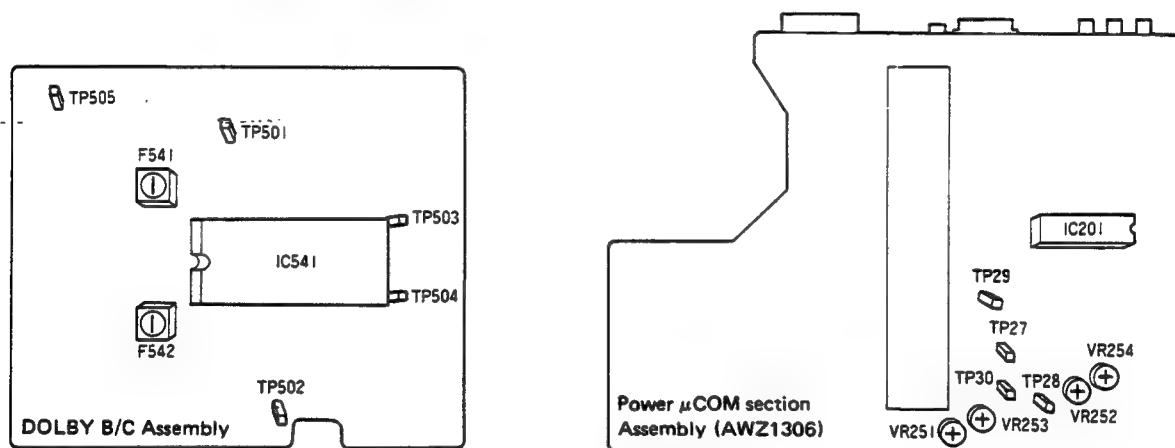


Fig. 7-1 Tape speed adjustment

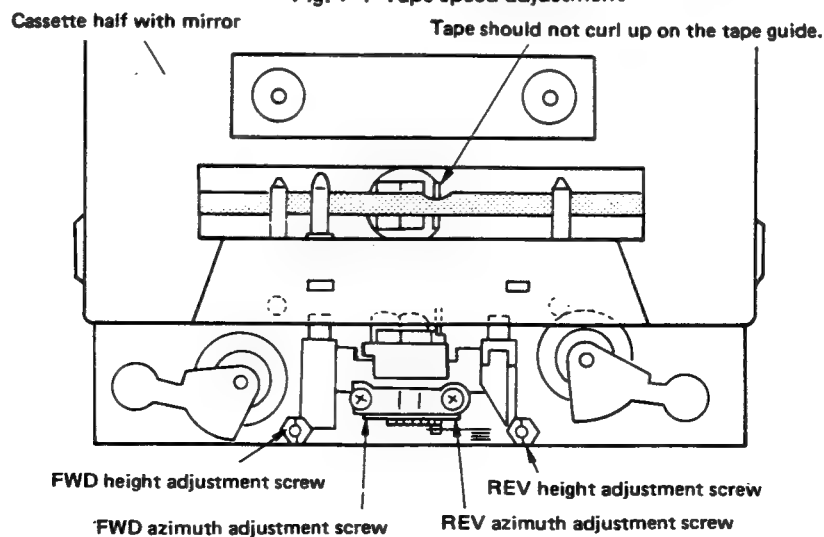


Fig. 7-2 Tape path adjustment

## 7.2 ELECTRICAL ADJUSTMENT

### Adjustment Conditions

1. Mechanism section adjustment should have been completed first.
2. Heads should be cleaned and demagnetized.
3. Aging of deck should be performed for at least 2–3 minutes before starting electrical adjustment.
4. Reference signal should be set to 0dB=1Vrms.
5. The following switch setting should not be changed, unless otherwise indicated:  
DOLBY NR: OFF

### Test Tapes

- STD-331B: Playback adjustment (See Fig. 7-3.)  
 STD-608A: Blank normal tape  
 STD-620: Blank chrome tape  
 STD-610: Blank metal tape

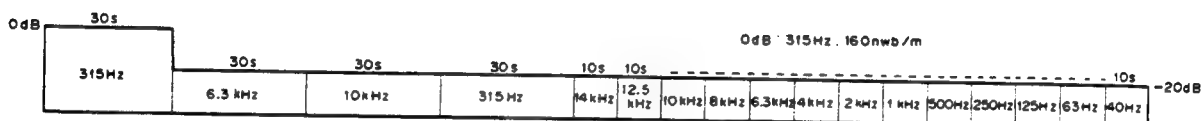


Fig. 7-3 STD-331B test tape

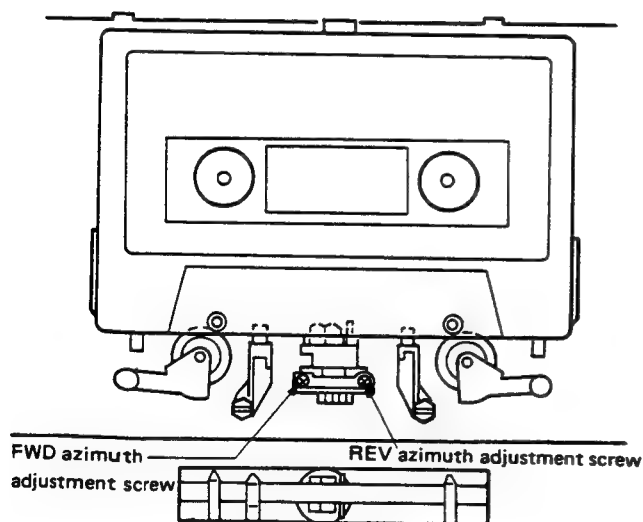


Fig. 7-4 Head azimuth adjustment

### Deck I

1. Head angle adjustment
2. Playback level adjustment
3. Recording/playback frequency characteristics adjustment
4. Recording level adjustment

### Deck II

1. Head angle adjustment
2. Playback level adjustment
3. Recording/playback frequency characteristics adjustment
4. Recording level adjustment

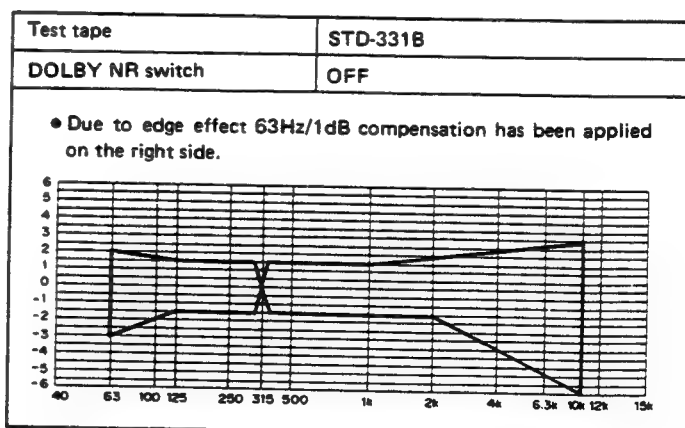


Fig. 7-5 Playback frequency-response allowance range



<b>• Deck I adjustment</b> • This unit incorporates auto tape selector.							
<b>1. Head angle adjustment</b> • Turn VR301 and VR302 (playback level adjustment VRs) fully clockwise (MAX. position).							
Tape selector	Mode	Input signal/test tape		Adjusting point	Measuring points	Adjusting value	Remarks
NORM	PLAY	Play back 10kHz, -20dB with STD-331B test tape		Head angle adjustment screw (Fig. 7-4)	TP501 (L) TP502(R)	Maximum playback signal level	Lock screw after completion of adjustment.
<b>2. Playback level adjustment</b> • This adjustment is set Dolby level during playback, so the adjustment should be performed carefully.							
Tape selector	Mode	Input signal/test tape		Adjusting point	Measuring points	Adjusting value	Remarks
NORM	PLAY	Play back 315Hz, 0dB with test tape STD-331B		VR301 (L) VR302(R)	TP501 (L) TP502(R)	-10.2dBV (309mV)	
<b>3. Recording/Playback frequency characteristics adjustment</b> • This adjustment is set to recording bias, so care should be taken to avoid distortion factor deterioration due to under-bias operation.							
Tape selector	Mode	Input signal/test tape		Adjusting point	Measuring points	Adjusting value	Remarks
NORM	REC	Input 315Hz signal to VIDEO terminal.	1	Input signal level	TP501 (L) TP502(R)	-30.2dBV (31mV)	Set recording level VR to center position.
NORM	REC/PLAY	Record and play back 315Hz, 10kHz with STD-608A test tape	2	VR309 (L) VR310(R)	TP501 (L) TP502(R)	Record and play back repeatedly, making corrections so as to obtain a $0 \pm 0.5$ dB 10kHz playback level of the recorded 315Hz signal.	
• Select test tape/DOLBY NR switch, and frequency characteristics zone shown in Fig. 7-7 should be satisfied.							
<b>4. Recording level adjustment</b>							
Tape selector	Mode	Input signal/test tape		Adjusting point	Measuring points	Adjusting value	Remarks
NORM	REC	Input 315Hz signal to VIDEO terminal	1	Input signal level	TP501 (L) TP502(R)	-10.2dBV (309mV)	
NORM	REC/PLAY	Perform recording and playback of 315Hz to STD-608A test tape	2	VR305 (L) VR306(R)	TP501 (L) TP502(R)	Record and playback repeatedly, making corrections so that playback level of the 315Hz signal is -10.2dBV (309mV).	
METAL	REC/PLAY	Perform recording and playback of 315Hz to STD-610 test tape	3		TP501 (L) TP502(R)	Confirm that playback level of the 315Hz signal is -10.2dBV $\pm 2$ dB.	
<b>• Deck II adjustment</b> • This unit incorporates auto tape selector.							
<b>1. Head angle adjustment</b> • Turn VR303 and VR304 (playback level adjustment VRs) fully clockwise (MAX. position).							
Tape selector	Mode	Input signal/test tape		Adjusting points	Measuring points	Adjustment value	Remarks
NORM	PLAY	Playback 10kHz, -20dB with STD-331B test tape		Head angle adjustment screw (Fig. 7-4)	TP501 (L) TP502(R)	Maximum playback signal level	Lock screw after completion of adjustment
<b>2. Playback level adjustment</b> • This adjustment sets Dolby level during playback, so should be performed carefully.							
Tape selector	Mode	Input signal/test tape		Adjusting points	Measuring points	Adjustment value	Remarks
NORM	PLAY	Playback 315Hz, 0dB with STD-331B test tape		VR303 (L) VR304(R)	TP501 (L) TP502(R)	-10.2dBV (309mV)	
<b>3. Recording/Playback frequency characteristics adjustment</b> • This adjustment is set to recording bias, so care should be taken to avoid distortion factor deterioration due to under-bias operation.							
Tape selector	Mode	Input signal/test tape		Adjusting points	Measuring points	Adjustment value	Remarks
NORM	REC	Input 315Hz signal to VIDEO terminal	1	Input signal level	TP501 (L) TP502(R)	-30.2dBV (31mV)	Set recording level VR to center position.
NORM	REC/PLAY	Record (315Hz) and playback 315Hz, 10kHz to STD-608A test tape	2	VR311 (L) VR312(R)	TP501 (L) TP502(R)	Record and playback repeatedly, making corrections so as to obtain $0 \pm 0.5$ dB 10kHz playback level of the recorded 315Hz signal.	
• Select test tape, DOLBY NR switch and frequency characteristics zone shown in Fig. 7-7 should be satisfied.							

## 4. Recording level adjustment

Tape selector	Mode	Input signal/test tape		Adjusting points	Measuring points	Adjustment value	Remarks
NORM	REC	Input 315Hz signal to VIDEO terminal	1	Input signal level	TP501 (L) TP502(R)	-10.2dBV (309mV)	
NORM	REC/PLAY	Perform recording and playback of 315Hz of STD-608A test tape	2	VR307(L) VR308(R)	TP501 (L) TP502(R)	Record and playback repeatedly, making corrections so that the playback of 315Hz signal is -10.2dBV (309mV).	
METAL	REC/PLAY	Perform recording and playback of 315Hz to STD-610 test tape	3		TP501 (L) TP502(L)	Confirm that playback level of the 315Hz signal is -10.2dBV $\pm$ 2dB.	

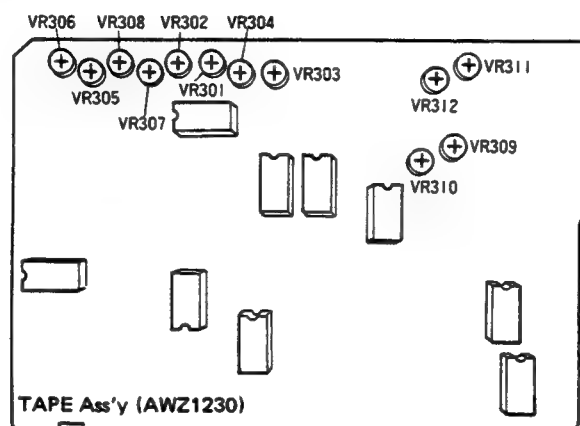


Fig. 7-6 Deck I, Deck II adjustment

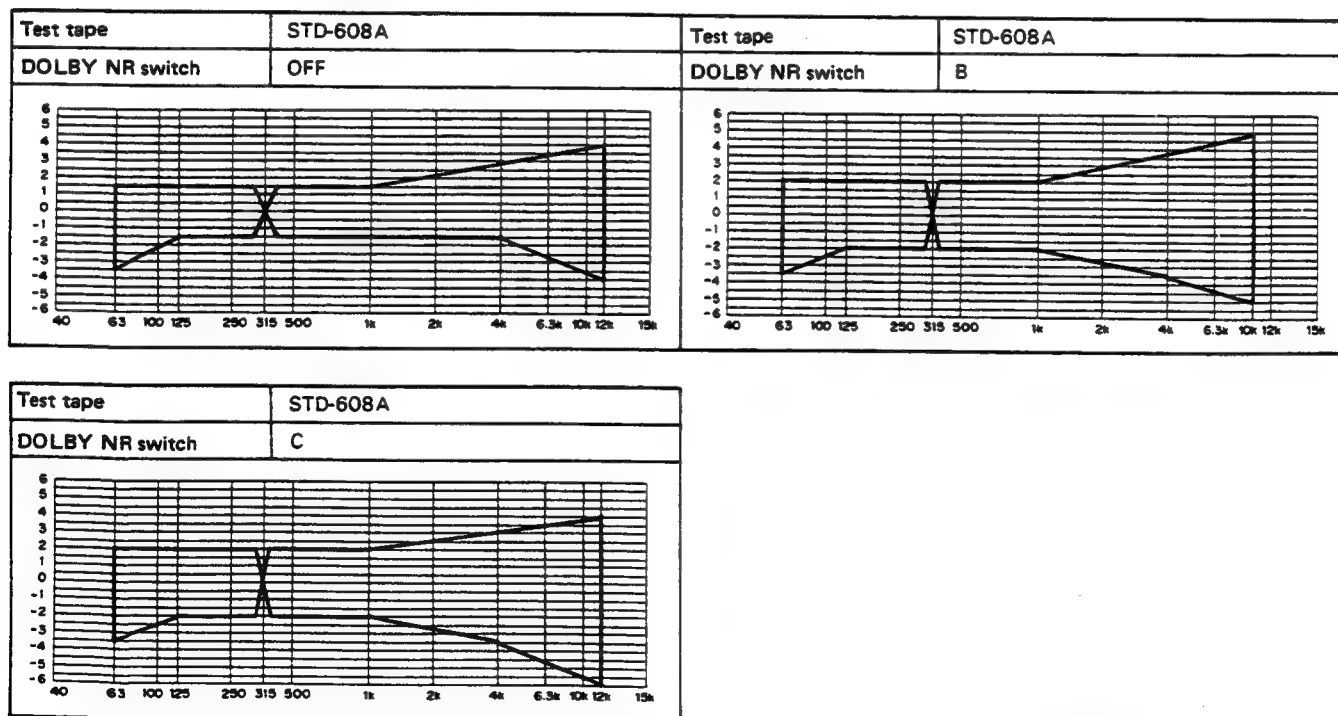


Fig. 7-7-1 Recording/Playback frequency-response allowance range (NORM)

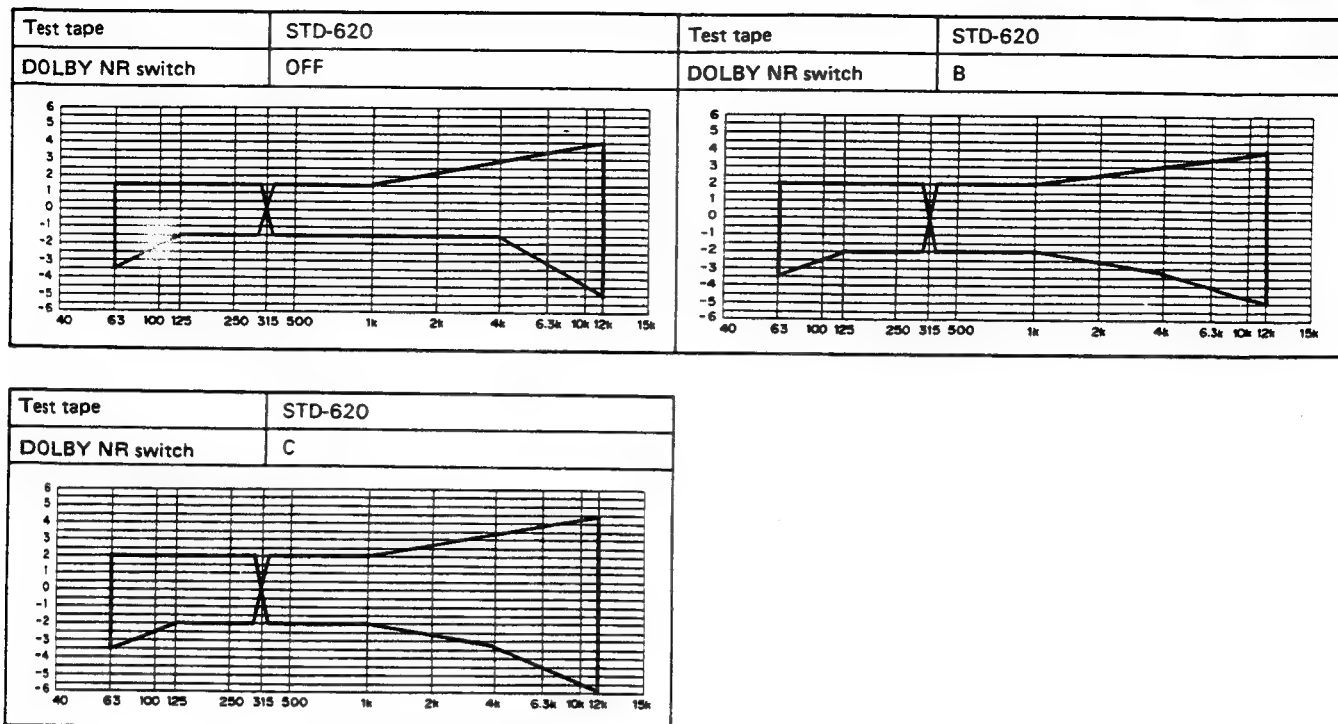
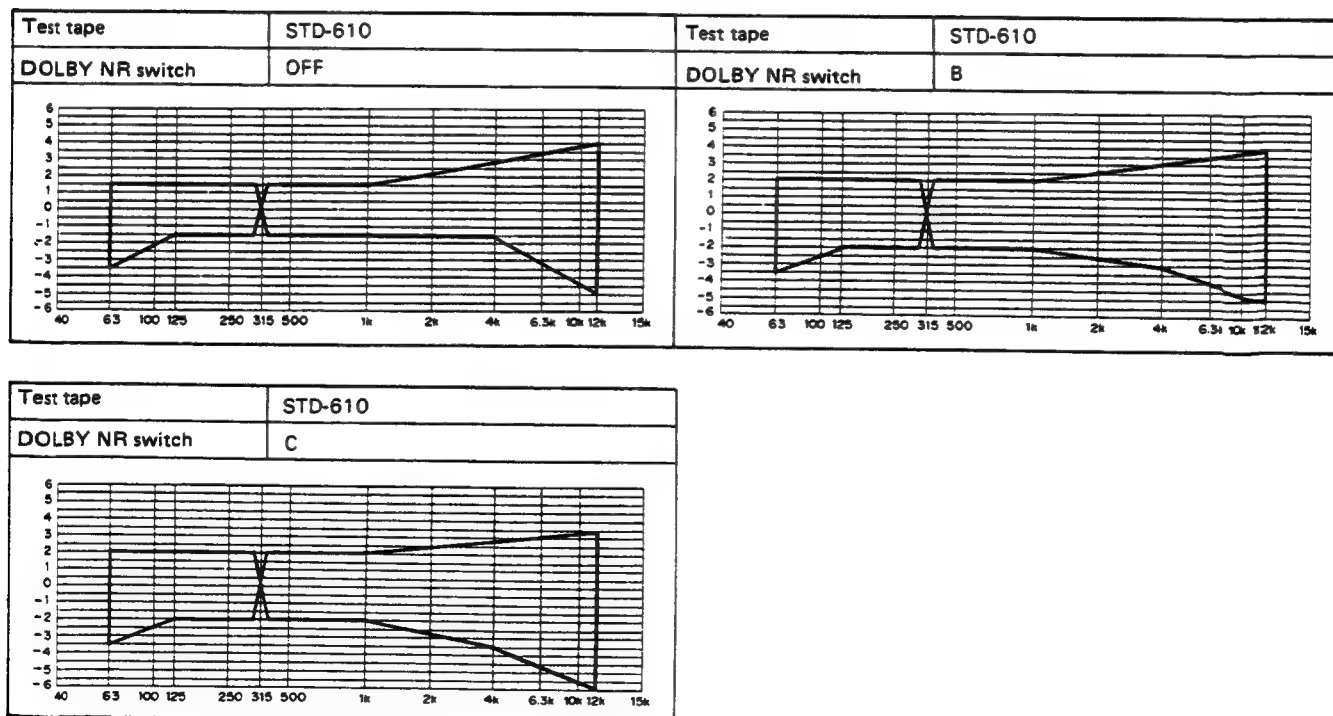
Fig. 7-7-2 Recording/Playback frequency-response allowance range (CrO<sub>2</sub>)

Fig. 7-7-3 Recording/Playback frequency-response allowance range (METAL)

## 7. RÉGLAGE

### 7.1 PROCEDURES DE RÉGLAGE

1. Réglage de la vitesse de défilement de la bande (effectuer le réglage de la vitesse double avant le réglage de la vitesse normale)			
Mode	Bande test	Points de réglage	Spécifications/valeurs (fréquence de lecture)
PLAY	Section 3 kHz de la bande STD-301 (Platine I)	VR253 (vitesse double)	Régler sur 6030 Hz (court-circuiter TP27 et TP29 après la lecture)
		VR251 (vitesse normale)	Régler sur 3015 Hz (appuyer sur la touche PLAY)
	Section 3 kHz de la bande STD-301 (Platine II)	VR254 (vitesse double)	Régler sur 6030 Hz (court-circuiter TP28 et TP29 après la lecture)
		VR252 (vitesse normale)	Régler sur 3015 Hz (appuyer sur la touche PLAY)
2. Réglage du parcours de la bande			
Mode	Points de réglage		Spécifications
FWD	Vis de réglage de l'azimuth lors de l'avance rapide		Lecture d'une tonalité de 10 kHz à -20 dB en utilisant la bande test STD-331.
REV	Vis de réglage de l'azimuth lors du rebobinage		Régler pour obtenir un niveau de sortie maximum sur les points test TP501 et TP502.
Mettre en place une cassette, soulever ensuite la bass de la tête avec le doigt de manière à ce que la bande entre en contact avec le guide de bande.			
STOP	Vis de réglage de hauteur (gauche et droit)		Vérifier visuellement que la bande se trouve au centre du guide de bande.
FWD PLAY	Vis de réglage de la hauteur lors de l'avance rapide		Régler le guide bande primaire de manière à ce que la bande n'ondule pas.
REV PLAY	Vis de réglage de la hauteur lors du rebobinage		

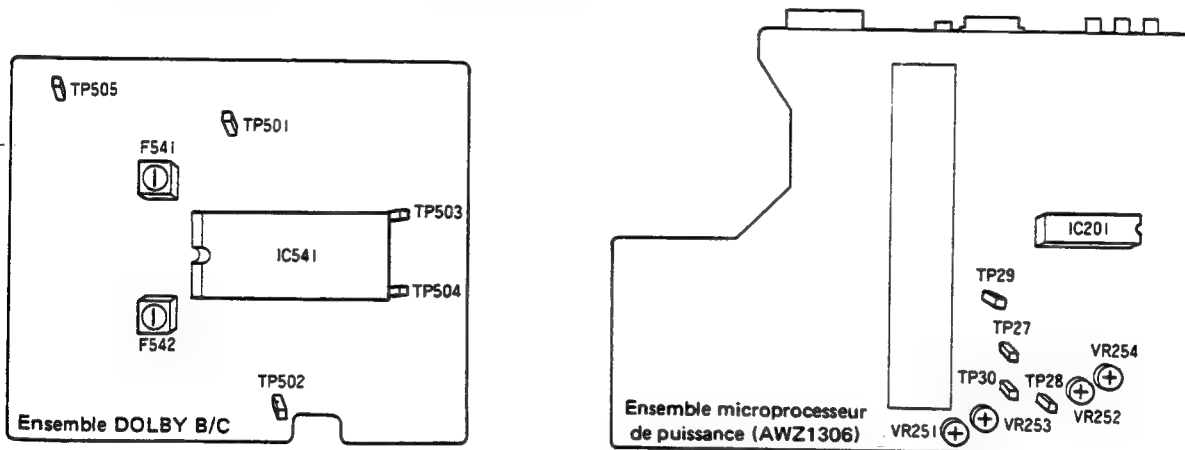


Fig. 7-1 Réglage de la vitesse de défilement de la bande

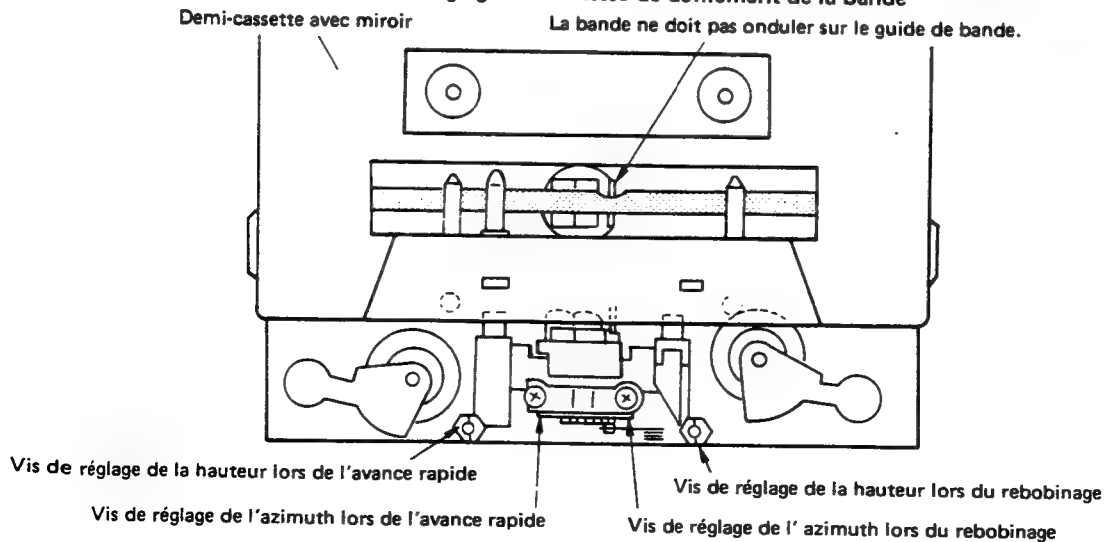


Fig. 7-2 Réglage du parcours de la bande

## 7.2 RÉGLAGES ELECTRIQUES

### Conditions de réglage

1. Effectuer en premier lieu les réglages mécaniques.
2. Les têtes doivent être propres et démagnétisées.
3. La platine doit être sous tension depuis 2 à 3 minutes minimum avant de commencer les réglages électriques.
4. Il faut utiliser un signal de référence de 0 dB, 1V off.
5. Ne pas modifier la position du commutateur suivant, sauf mention contraire:  
DOLBY NR: sur la position OFF

### Bandes test

- STD-331B: Réglage de la lecture (se reporter à la Fig. 7-3)  
 STD-608A: Bande vierge de type normal  
 STD-620: Bande vierge de type chrome  
 STD-610: Bande vierge de type métal

### Platine I

1. Réglage de l'inclinaison de la tête
2. Réglage du niveau de lecture
3. Réglage de la fréquence d'enregistrement/lecture
4. Réglage du niveau d'enregistrement

### Platine II

1. Réglage de l'inclinaison de la tête
2. Réglage du niveau de lecture
3. Réglage de la fréquence d'enregistrement/lecture
4. Réglage du niveau d'enregistrement

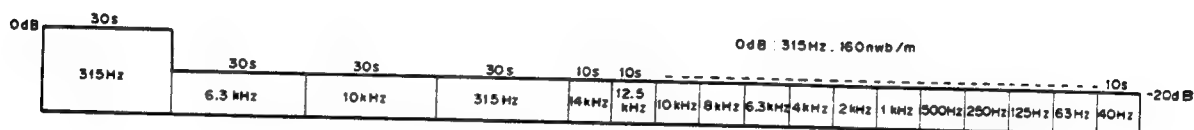


Fig. 7-3 Bande test STD-331B

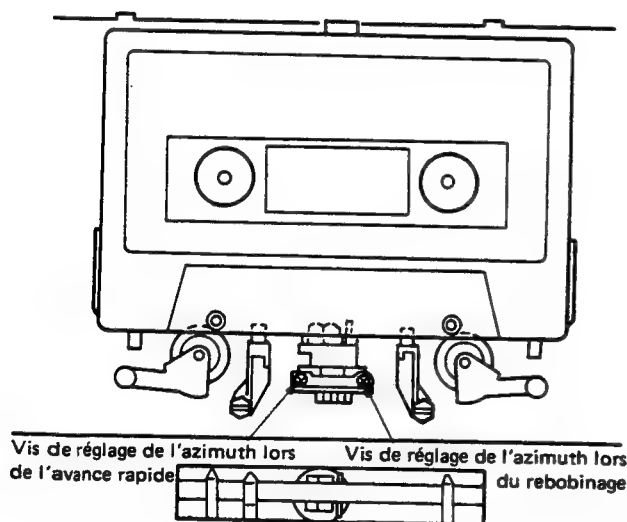


Fig. 7-4 Réglage de l'azimuth de la tête

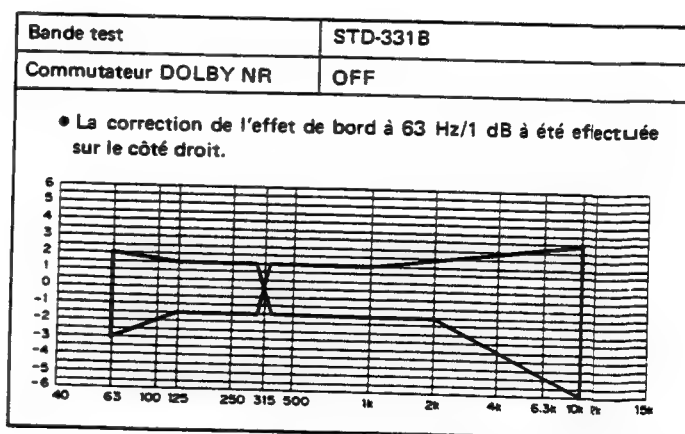


Fig. 7-5 Tolérance de la réponse en fréquence lors de la lecture

# ● Réglage de la platine I • Cet appareil est équipé d'un sélecteur automatique de type de bande.

## 1. Réglage de l'inclinaison de la tête

- Tourner VR301 et VR302 (résistances variables de réglage du niveau de lecture) à fond dans le sens des aiguilles d'une montre (position MAX.).

Sélecteur de type de bande	Mode	Signal d'entrée/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	PLAY	10 kHz, -20 dB (lecture)/STD-331B	Vis de réglage de l'inclinaison de la tête (Fig. 7-4)	TP501 (L) TP502(R)	Niveau maximum du signal de lecture	Bloquer la vis après réglage.

## 2. Réglage du niveau de lecture

- Ce réglage agit sur le niveau de lecture Dolby et doit donc être effectué avec soin.

Sélecteur de type de bande	Mode	Signal d'entrée/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	PLAY	315 kHz, 0 dB (lecture)/STD-331B	VR301 (L) VR302(R)	TP501 (L) TP502(R)	-10,2dBV (309mV)	

## 3. Réglage de la fréquence d'enregistrement/lecture

- Ce réglage agit sur la polarisation pour enregistrement et doit donc être effectué avec soin pour éviter la distorsion provoquée lors du fonctionnement avec polarisation trop faible.

Sélecteur de type de bande	Mode	Signal d'entrée/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	REC	315 kHz sur la prise VIDEO	1 Niveau du signal d'entrée	TP501 (L) TP502(R)	-30,2dBV (31mV)	Placer la résistance ajustable de réglage du niveau d'enregistrement en position médiane.
NORM	REC/PLAY	315 Hz (enregistrement et 10 kHz (lecture)/STD-608A	2 VR309 (L) VR310(R)	TP501 (L) TP502(R)		Enregistrer et effectuer la lecture de façon répétée, en faisant des corrections de manière à ce que le niveau de lecture soit de $0 \pm 0,5$ dB à 10 kHz correspondant au signal de 315 Hz enregistré.

- Les courbes de fréquence de la Fig. 7-7 doivent être atteintes pour chaque combinaison de bande test/position du commutateur DOLBY NR.

## 4. Réglage du niveau d'enregistrement

Sélecteur de type de bande	Mode	Signal d'entrées/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	REC	315 kHz sur la prise VIDEO	1 Niveau du signal d'entrée	TP501 (L) TP502(R)	-10,2dBV (309mV)	
NORM	REC/PLAY	315 Hz (enregistrement & lecture)/STD-608A	2 VR305 (L) VR306(R)	TP501 (L) TP502(R)		Enregistrer et effectuer la lecture de façon répétée, en effectuant des corrections de manière à ce que le niveau de lecture soit de -10,2dBV (309mV) pour le signal 315 Hz.
METAL	REC/PLAY	315 Hz (enregistrement & lecture)/STD610	3	TP501 (L) TP502(R)		Vérifier que le niveau de lecture du signal de 315 Hz est de -10,2 dBV $\pm 2$ dB.

# ● Réglage de la platine II • Cet appareil est équipé d'un sélecteur automatique de type de bande.

## 1. Réglage de l'inclinaison de la tête

- Tourner VR303 et VR304 (résistances variables de réglage du niveau de lecture) à fond dans le sens des aiguilles d'une montre (position MAX.).

Sélecteur de type de bande	Mode	Signal d'entrée/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	PLAY	10 kHz, -20 dB (lecture)/STD-331B	Vis de réglage de l'inclinaison de la tête (Fig. 7-4)	TP501 (L) TP502(R)	Niveau maximum du signal de lecture	Bloquer la vis après réglage.

## 2. Réglage du niveau de lecture

- Ce réglage agit sur le niveau de lecture Dolby et doit donc être effectué avec soin.

Sélecteur de type de bande	Mode	Signal d'entrée/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	PLAY	315 kHz, 0 dB (lecture)/STD-331B	VR303 (L) VR304(R)	TP501 (L) TP502(R)	-10,2dBV (309mV)	



### 3. Réglage de la fréquence d'enregistrement/lecture

- Ce réglage agit sur la polarisation pour enregistrement et doit donc être effectué avec soin pour éviter la distorsion provoquée lors du fonctionnement avec polarisation trop faible.

Sélecteur de type de bande	Mode	Signal d'entrée/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	REC	315 kHz sur la prise VIDEO	1 Niveau du signal d'entrée	TP501 (L) TP502(R)	-30,2dBV (31mV)	Placer la résistance ajustable de réglage du niveau d'enregistrement en position médiane.
NORM	REC/PLAY	315 Hz (enregistrement) et 10 kHz (lecture)/ STD-608A	2 VR311 (L) VR312(R)	TP501 (L) TP502(R)		Enregistrer et effectuer la lecture de façon répétée, en faisant des corrections de manière à ce que le niveau de lecture soit de $0 \pm 0,5$ dB à 10 kHz correspondant au signal de 315 Hz enregistré.

• Les courbes de fréquence de la Fig. 7-7 doivent être atteintes pour chaque combinaison de bande test/position du commutateur DOLBY NR.

### 4. Réglage du niveau d'enregistrement

Sélecteur de type de bande	Mode	Signal d'entrée/ bande test	Points de réglage	Points de mesure	Valeur de réglage	Remarques
NORM	REC	315 kHz sur la prise VIDEO	1 Niveau de signal d'entrée	TP501 (L) TP502(R)	-10,2dBV (309mV)	
NORM	REC/PLAY	315 Hz (enregistrement & lecture)/STD-608A	2 VR307 (L) VR308(R)	TP501 (L) TP502(R)		Enregistrer et effectuer la lecture de façon répétée, en effectuant des corrections de manière à ce que le niveau de lecture soit de -10,2dBV (309mV) pour le signal 315 Hz.
METAL	REC/PLAY	315 Hz (enregistrement & lecture)/STD-610	3	TP501 (L) TP502(R)		Vérifier que le niveau de lecture du signal de 315 Hz est de -10,2 dBV $\pm 2$ dB.

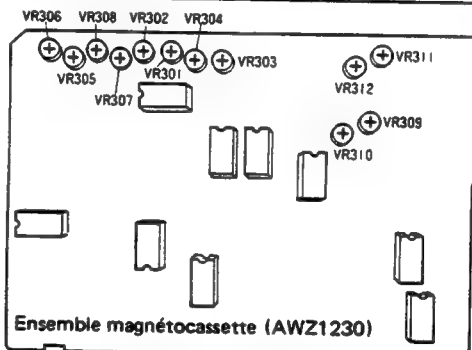


Fig. 7-6 Réglage de la platine I, platine II

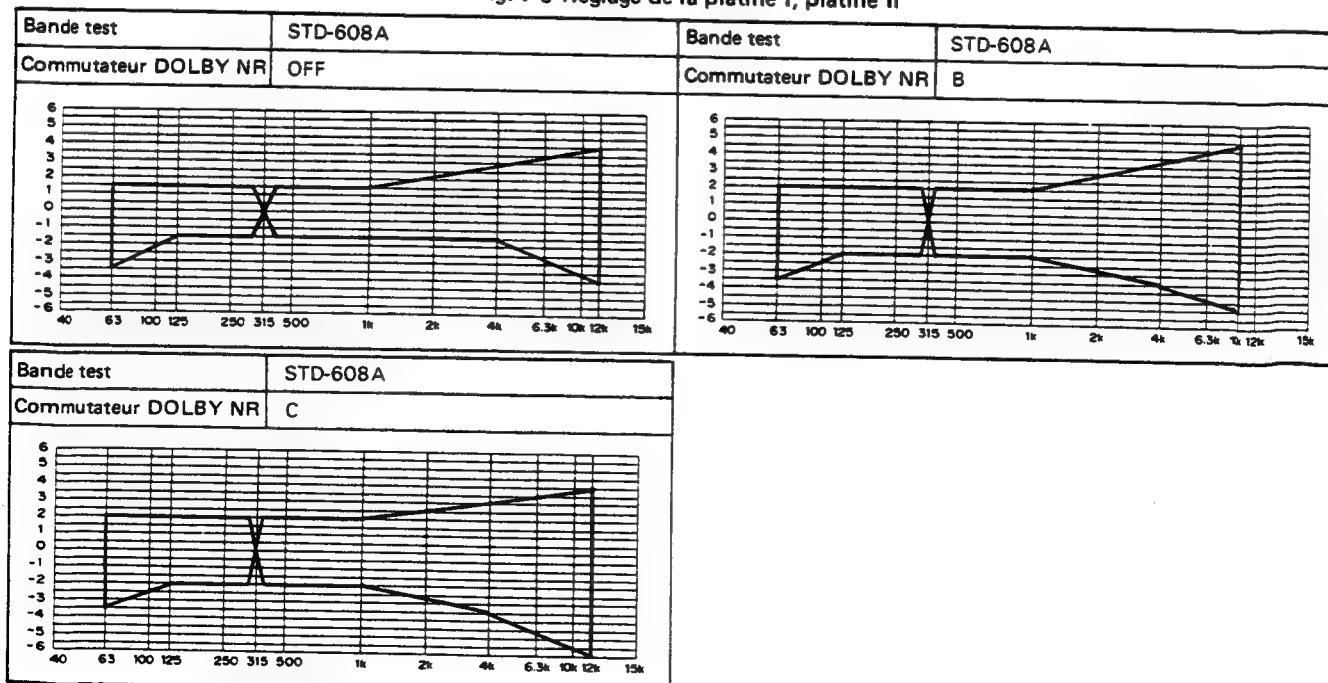


Fig. 7-7-1 Tolérance de la réponse en fréquence d'enregistrement/lecture (NORM)

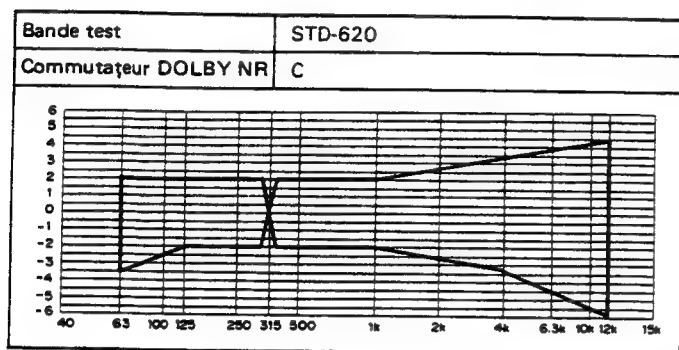
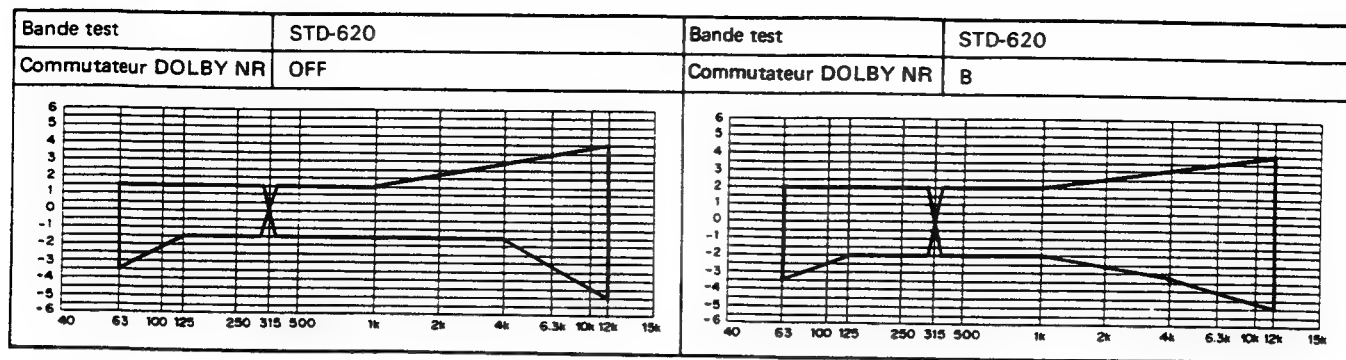


Fig. 7-7-2 Tolérance de la réponse en fréquence d'enregistrement/lecture (CrO<sub>2</sub>)

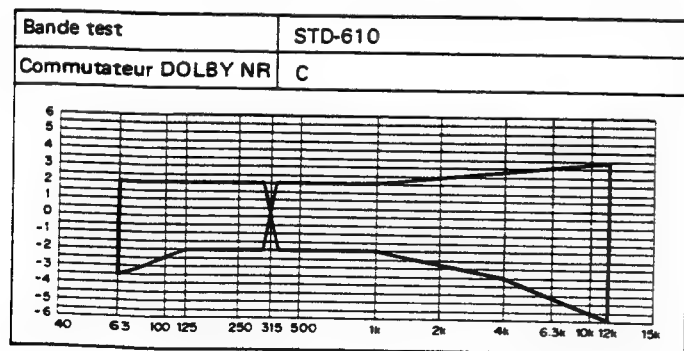
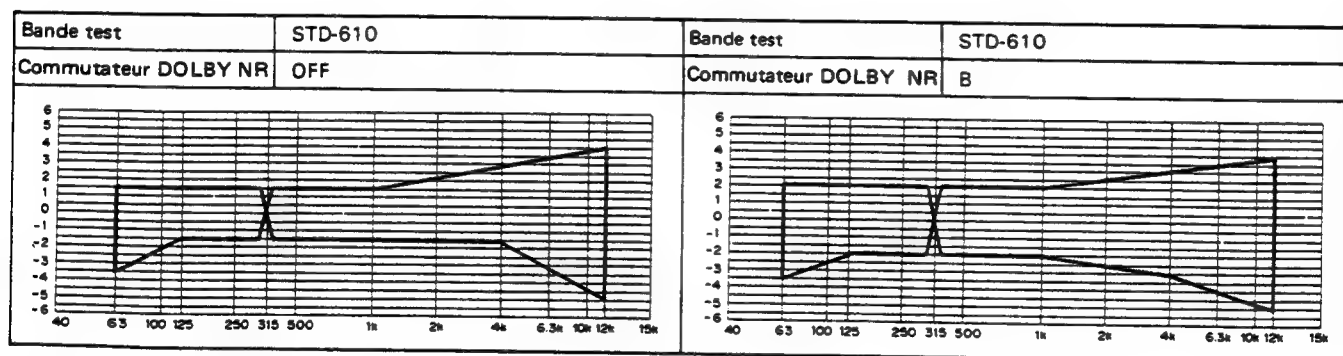


Fig. 7-7-3 Tolérance de la réponse en fréquence d'enregistrement/lecture (METAL)

## 7. AJUSTE

### 7.1 PROCEDIMIENTOS DE AJUSTE

1. Ajuste de velocidad de cinta (realizar el ajuste de velocidad doble antes que el de velocidad normal)			
Modo	Cinta de prueba	Puntos de ajuste	Especificaciones/Valores nominales (frecuencia de reproducción)
PLAY	Sección de 3kHz del STD-301 (platina I)	VR253 (velocidad doble)	Ajustar a 6030 Hz (cortocircuitar TP27 y TP29 después de la reproducción).
		VR251 (velocidad normal)	Ajustar a 3015 Hz (presionar el interruptor PLAY)
	Sección de 3kHz del STD-301 (platina II)	VR254 (velocidad doble)	Ajustar a 6030 Hz (cortocircuitar TP28 y TP29 después de la reproducción).
		VR252 (velocidad normal)	Ajustar a 3015 Hz (presionar el interruptor PLAY)
2. Ajuste del recorrido de la cinta			
Modo	Puntos de ajuste		Especificaciones
FWD	Tornillo de ajuste de azimuth de FWD		Reproducción de 10kHz, -20dB con cinta de prueba STD-331. Ajustar a máxima salida de señal en los puntos de prueba TP501 y TP502.
REV	Tornillo de ajuste de azimuth de REV		
Insertar el cassette y levantar la base de cabeza con el dedo de modo que la cinta toque la guía de cinta.			
STOP	Tornillos de ajuste de altura (izquierdo y derecho)		Verificar visualmente si la cinta está sobre la guía de cinta.
FWD PLAY	Tornillo de ajuste de altura de FWD		Ajustar la guía primaria de modo que en la cinta no se forme rizo.
REV PLAY	Tornillo de ajuste de altura de REV		

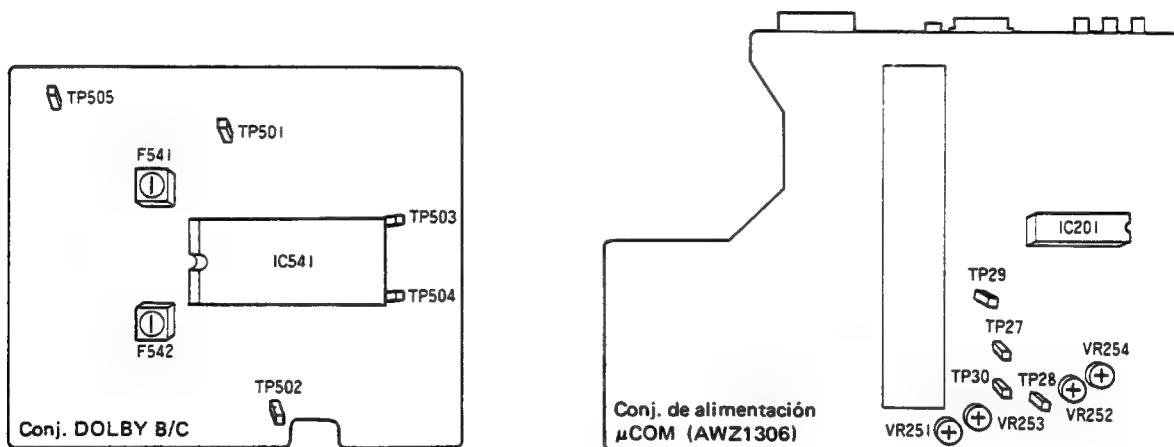


Fig. 7-1 Ajuste de velocidad de cinta

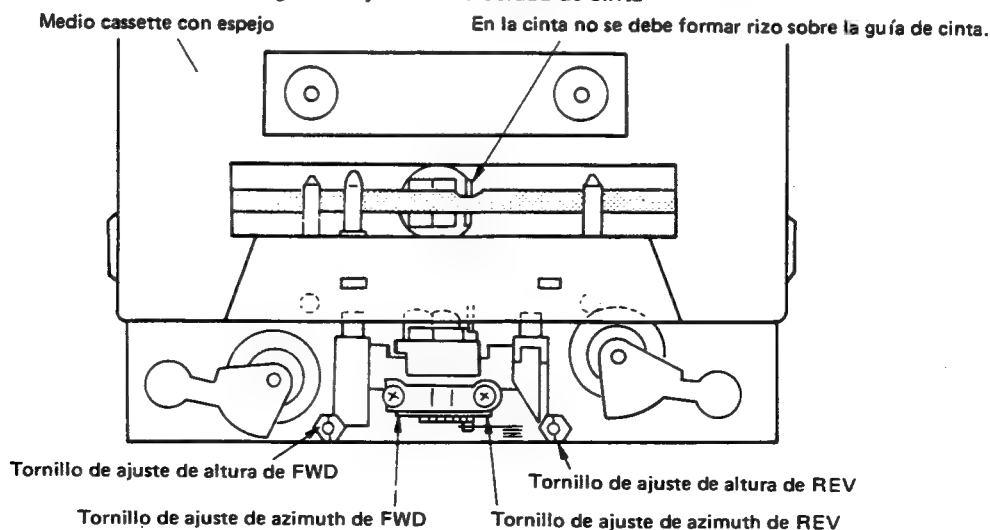


Fig. 7-2 Ajust del recorrido de la cinta

## 7.2 AJUSTE ELECTRICO

### Condiciones de ajuste

1. El ajuste del mecanismo debe finalizarse primero.
2. Las cabezas debe estar limpias y desmagnetizadas.
3. El magnetófono debe envejecerse por al menos 2-3 minutos antes de comenzar el ajuste eléctrico.
4. Debe emplearse una señal de referencia de 0 dB, 1 Vrms.
5. La siguiente posición de conmutador no debe cambiarse, excepto cuando se indique lo contrario:  
DOLBY NR: OFF

### Cintas de prueba

STD-331B: Ajuste de reproducción (ver Fig. 7-3)

STD-608A: Cinta virgen normal

STD-620: Cinta virgen de  $\text{CrO}_2$

STD-610: Cinta virgen de metal

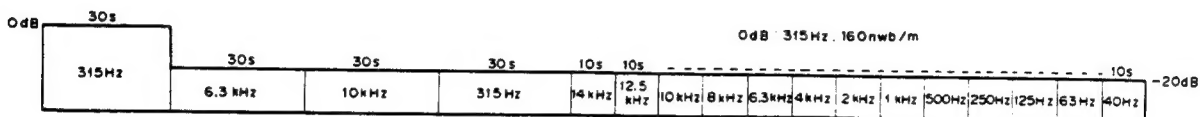


Fig. 7-3 Cinta de prueba STD-331B

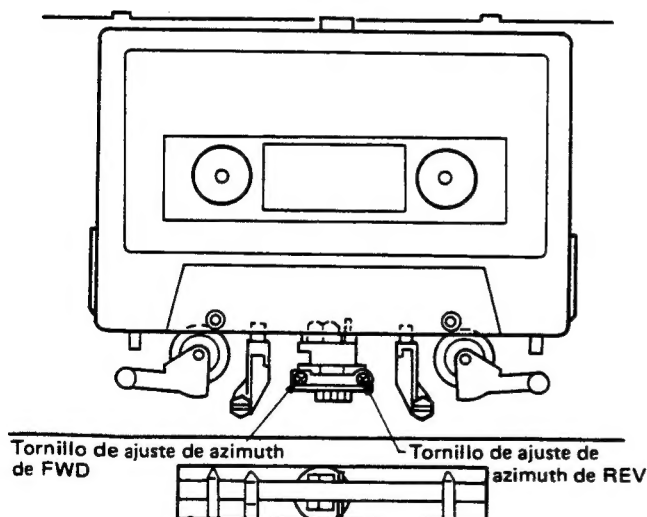


Fig. 7-4 Ajuste de azimuth de cabeza

### Magnetófono I

1. Ajuste del ángulo de cabeza
2. Ajuste del nivel de reproducción
3. Ajuste de característica de frecuencia de grabación/reproducción
4. Ajuste de nivel de grabación

### Magnetófono II

1. Ajuste del ángulo de cabeza
2. Ajuste del nivel de reproducción
3. Ajuste de característica de frecuencia de grabación/reproducción
4. Ajuste de nivel de grabación

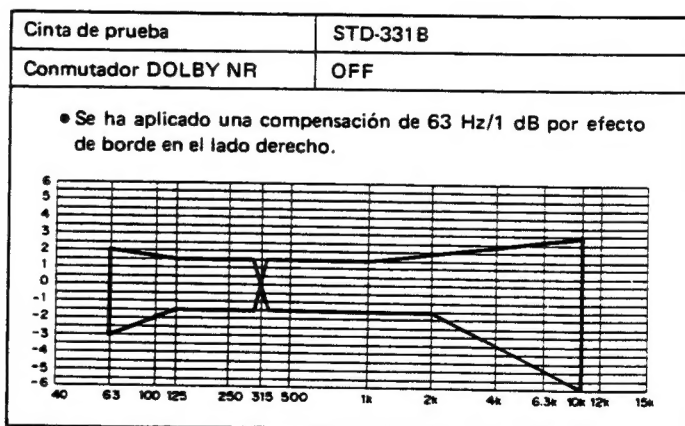


Fig. 7-5 Margen permisible de respuesta de reproducción

• **Ajuste de la platina I** • Esta unidad está equipada con selector automático de cinta.

**1. Ajuste del ángulo de cabeza**

- Girar VR301 y VR302 (RVs de ajuste de nivel de reproducción) completamente en sentido horario (posición MAX).

Selector de cinta	Modo	Señal de entrada/cinta de prueba	Puntos de ajuste	Puntos de medición	Valor de ajuste	Comentarios
NORM	PLAY	10kHz, -20dB (reproducción)/STD-331B	Tornillo de ajuste del ángulo de cabeza (Fig. 7-4)	TP501 (L) TP502(R)	Máximo nivel de señal de reproducción	Fijar el tornillo después del ajuste.

**2. Ajuste del nivel de reproducción**

- Este ajuste determina el nivel Dolby de reproducción, por lo que debe realizarse cuidadosamente.

Selector de cinta	Modo	Señal de entrada/cinta de prueba	Puntos de ajuste	Puntos de medición	Valor de ajuste	Comentarios
NORM	PLAY	315Hz, 0dB (reproducción)/STD-331B	VR301 (L) VR302(R)	TP501 (L) TP502(R)	-10,2dBV (309mV)	

**3. Ajuste de característica de frecuencia de grabación/reproducción**

- Este ajuste determina la polarización de grabación, por lo que debe cuidarse evitar el deterioro del factor de distorsión debido a polarización insuficiente.

Selector de cinta	Modo	Señal de entrada/ cinta de prueba		Puntos de ajuste	Puntos de medición	Valor de ajuste	Comentarios
NORM	REC	Entrada de 315Hz la jack VIDEO.	1	Nivel de señal de entrada	TP501 (L) TP502(R)	-30,2dBV (31mV)	Colocar el RV de nivel de grabación en la posición central.
NORM	REC/PLAY	315Hz (grabación) y 10kHz (reproducción)/ STD-608A	2	VR309 (L) VR310(R)	TP501 (L) TP502(R)	Grabar y reproducir repetidamente, efectuando correcciones hasta obtener nivel de reproducción de 10kHz igual a 0±0.5 dB de la señal de 315 Hz.	

- Las curvas de respuesta de frecuencia mostradas en Fig. 7-7 deben cumplirse para cada combinación de cinta de prueba/posición del conmutador DOLBY NR.

**4. Ajuste de nivel de grabación**

Selector de cinta	Modo	Señal de entrada/ Cinta de prueba		Puntos de ajuste	Puntos de medición	Valor de ajuste	Comentarios
NORM	REC	Entrada de 315Hz al jack VIDEO.	1	Nivel de señal de entrada	TP501 (L) TP502(R)	-10,2dBV (309mV)	
NORM	REC/PLAY	315Hz (grabación y reproducción)/ STD-608A	2	VR305 (L) VR306(R)	TP501 (L) TP502(R)	Grabar y reproducir repetidamente, efectuando correcciones hasta obtener un nivel de reproducción de -10,2 dBV (309mV) de la señal de 315 Hz.	
METAL	REC/PLAY	315Hz (grabación y reproducción)/STD-610	3		TP501 (L) TP502(R)	Confirmar que el nivel de reproducción de la señal de 315 Hz sea -10,2 dBV ±2 dB.	

• **Ajuste de la platina II** • Esta unidad está equipada con selector automático de cinta.

**1. Ajuste del ángulo de cabeza**

- Girar VR303 y VR304 (RVs de ajuste de nivel de reproducción) completamente en sentido horario (posición MAX).

Selector de cinta	Modo	Señal de entrada/cinta de prueba	Puntos de ajuste	Puntos de medición	Valor de medición	Comentarios
NORM	PLAY	10kHz, -20dB (reproducción)/STD-331B	Tornillo de ajuste del ángulo de cabeza (Fig. 7-4)	TP501 (L) TP502(R)	Máximo nivel de señal de reproducción	Fijar el tornillo después del ajuste.

**2. Ajuste del nivel de reproducción**

- Este ajuste determina el nivel Dolby de reproducción, por lo que debe realizarse cuidadosamente.

Selector de cinta	Modo	Señal de entrada/cinta de prueba	Puntos de ajuste	Puntos de medición	Valor de ajuste	Comentarios
NORM	PLAY	315Hz, 0dB (reproducción)/STD-331B	VR303 (L) VR304(R)	TP501 (L) TP502(R)	-10,2dBV (309mV)	

**3. Ajuste de característica de frecuencia de grabación/reproducción**

- Este ajuste determina la polarización de grabación, por lo que debe cuidarse evitar el deterioro del factor de distorsión debido a polarización insuficiente.

Selector de cinta	Modo	Señal de entrada/cinta de prueba		Puntos de ajuste	Puntos de medición	Valor de ajuste	Comentarios
NORM	REC	Entrada de 315Hz al jack VIDEO.	1	Nivel de señal de entrada	TP501 (L) TP502(R)	-30,2dBV (31mV)	Coloca el RV de nivel de grabación en la posición central.
NORM	REC/PLAY	315Hz (grabación) y 10kHz (reproducción)/STD-608A	2	VR311 (L) VR312(R)	TP501 (L) TP502(R)	Grabar y reproducir repetidamente, efectuando correcciones hasta obtener un nivel de reproducción de 10 kHz igual a 0±0,5 dB de la señal de 315 Hz.	

- Las curvas de respuesta de frecuencia mostradas en Fig. 7-7 deben cumplirse para cada combinación de cinta de prueba/posición del conmutador DOLBY NR.

## 4. Ajuste de nivel de grabación

Selector de cinta	Modo	Señal de entrada/ Cinta de prueba	Puntos de ajuste	Puntos de medición	Valor de ajuste	Comentarios
NORM	REC	Entrada de 315Hz al jack VIDEO.	1	Nivel de señal de entrada	TP501 (L) TP502(R)	-10,2dBV (309mV)
NORM	REC/PLAY	315Hz (grabación y reproducción)/ STD-608A	2	VR307 (L) VR308(R)	TP501 (L) TP502(R)	Grabar y reproducir repetidamente, efectuando correcciones hasta obtener un nivel de reproducción de -10,2 dBV (309mV) de la señal de 315 Hz.
METAL	REC/PLAY	315Hz (grabación y reproducción)/STD-610	3		TP501 (L) TP502(R)	Confirmar que el nivel de reproducción de la señal de 315 Hz sea -10,2 dBV $\pm 2$ dB.

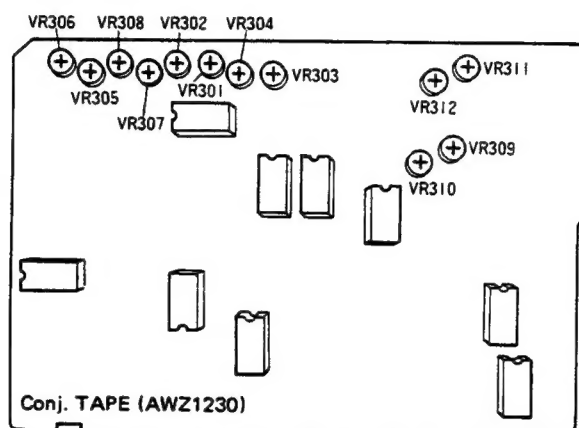


Fig. 7-6 Ajuste de las platinas I y II

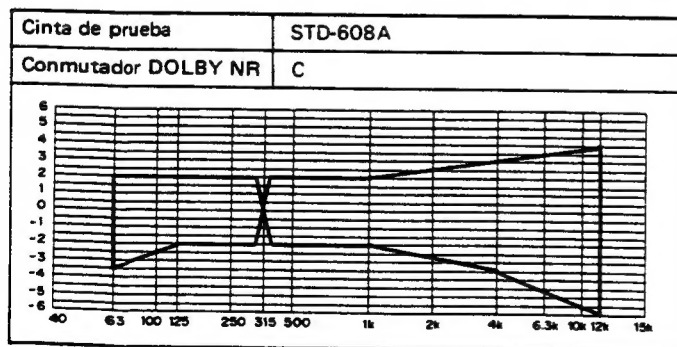
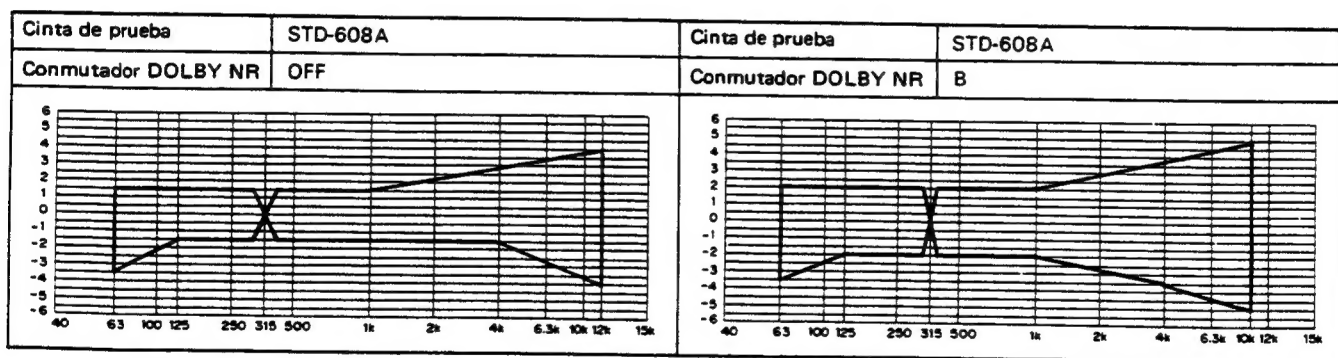


Fig. 7-7-1 Margenes permisibles de respuesta de frecuencia de grabación/reproducción (NORM)

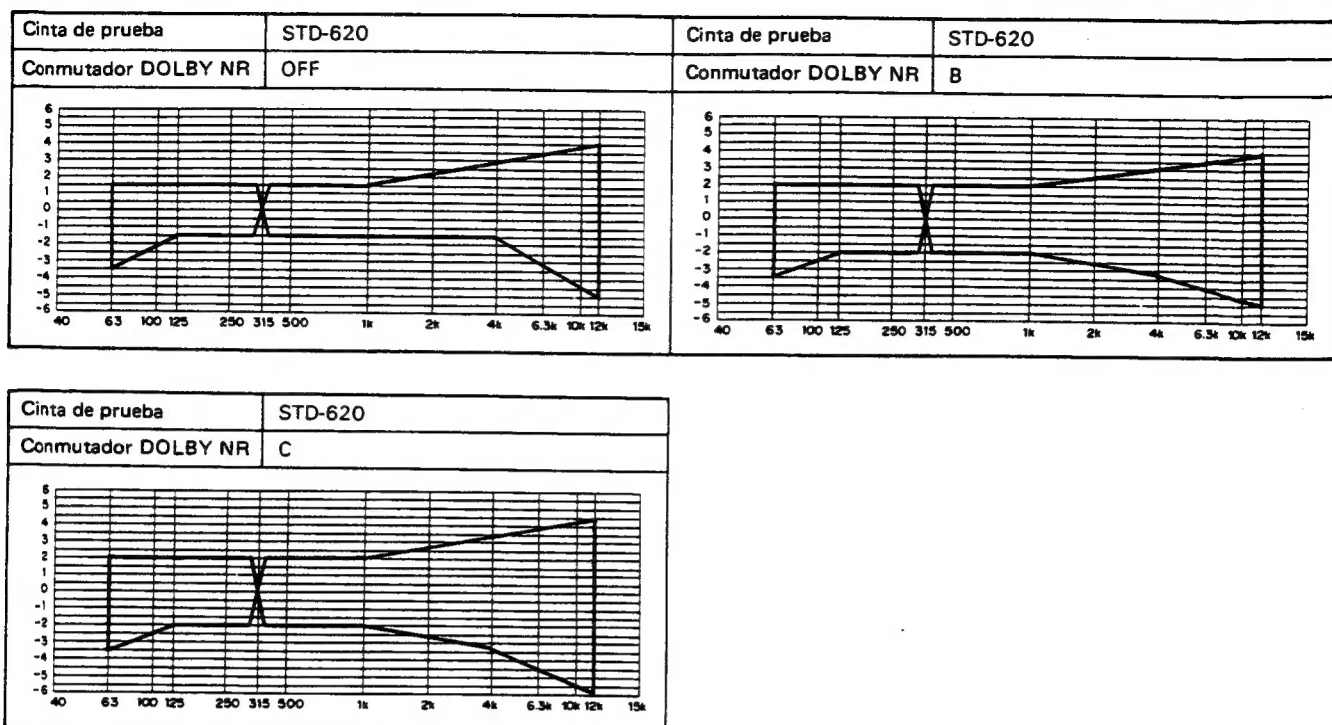


Fig. 7-7-2 Margenes permisibles de respuesta de frecuencia de grabación/reproducción (CrO<sub>2</sub>)

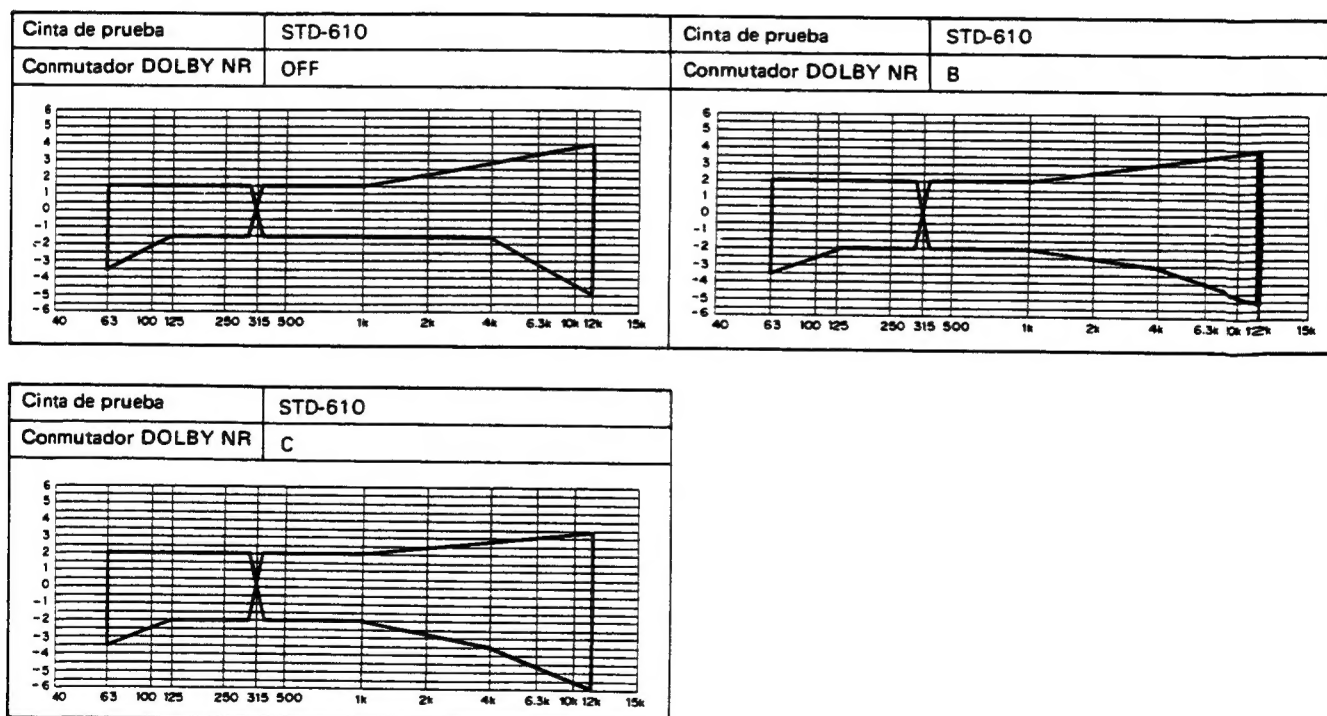


Fig. 7-7-3 Margenes permisibles de respuesta de frecuencia de grabación/reproducción (METAL)